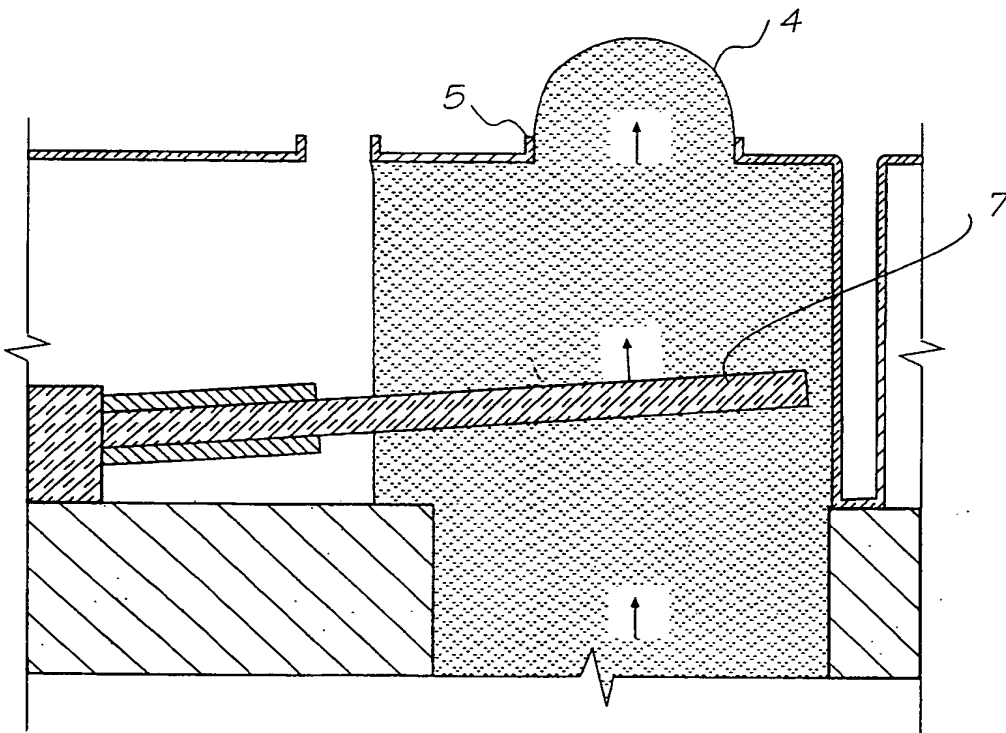
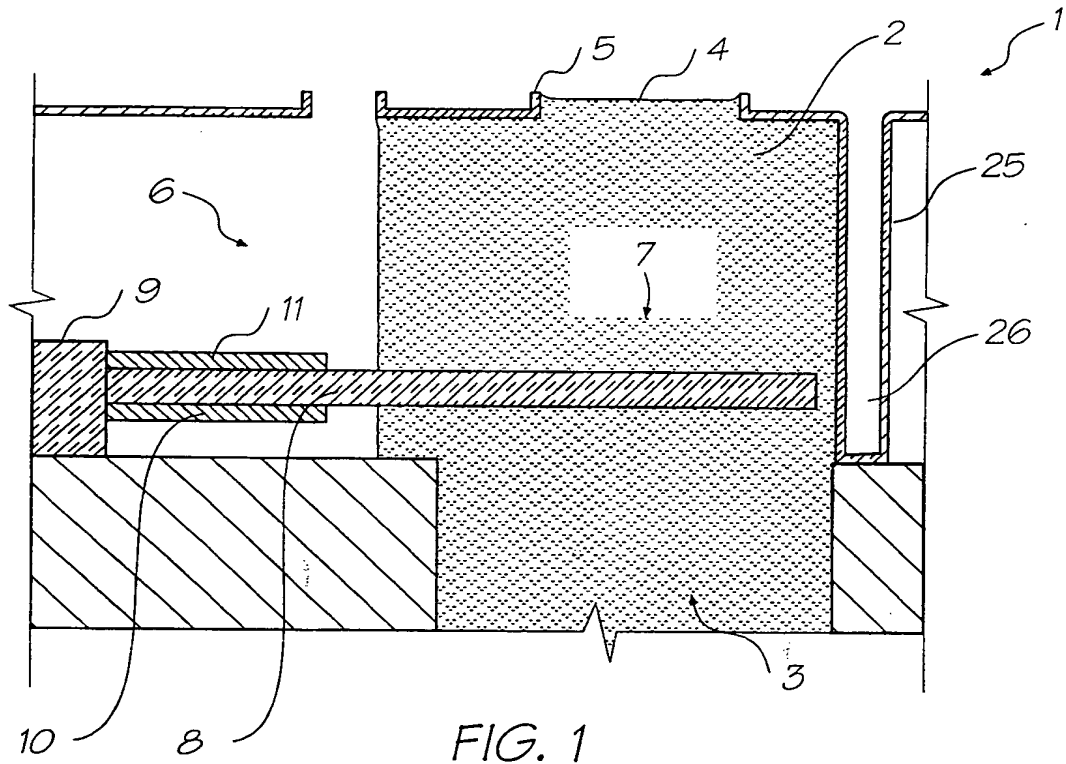


APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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APPROVED	O.G. FIG.
BY	CLASS. SUBCLAS.
DRAFTSMAN	

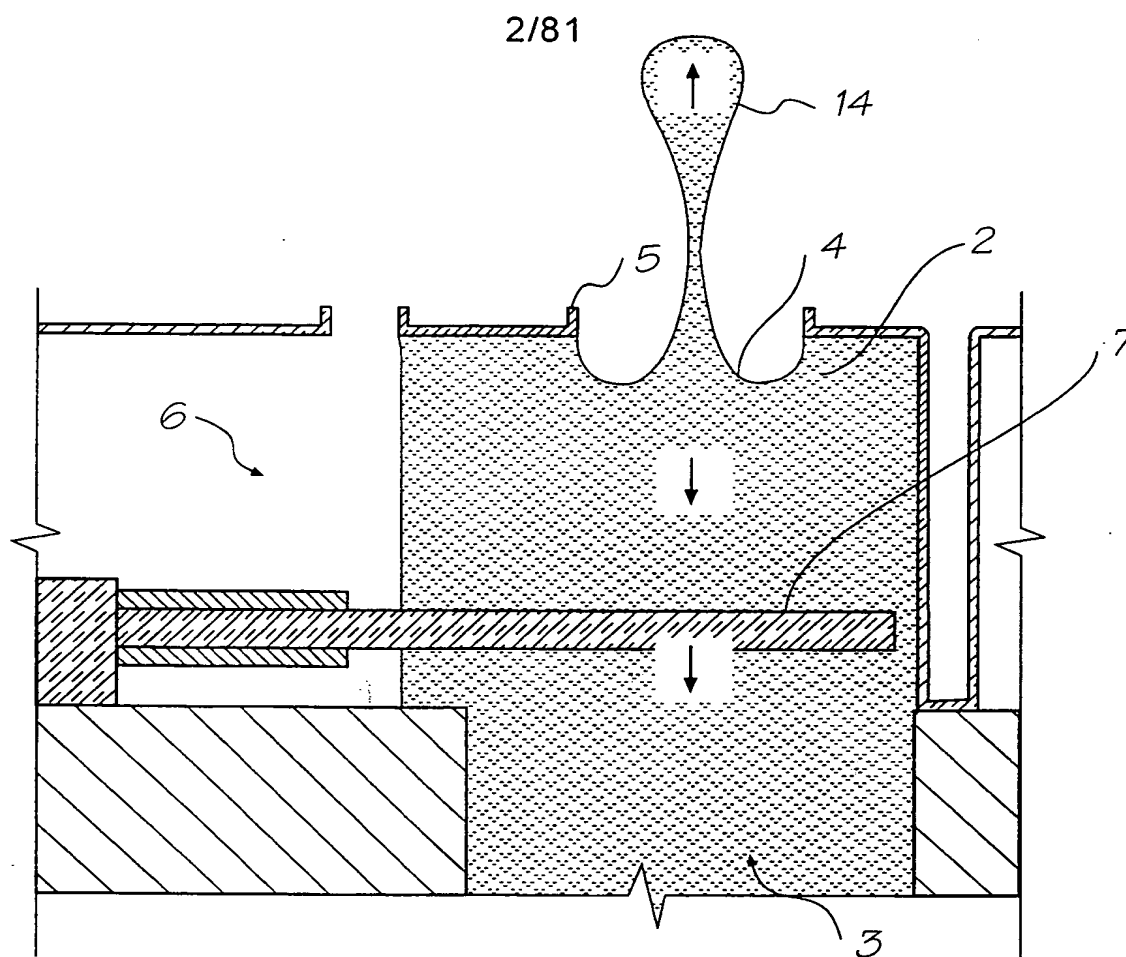


FIG. 3

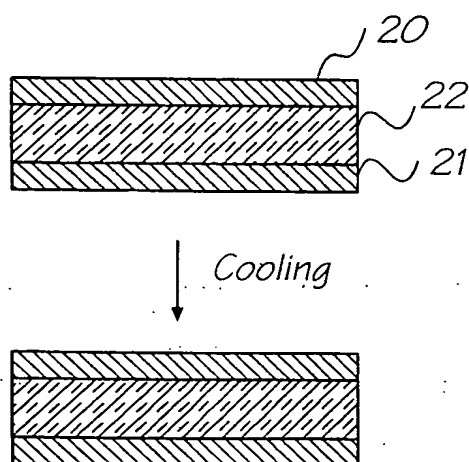


FIG. 4

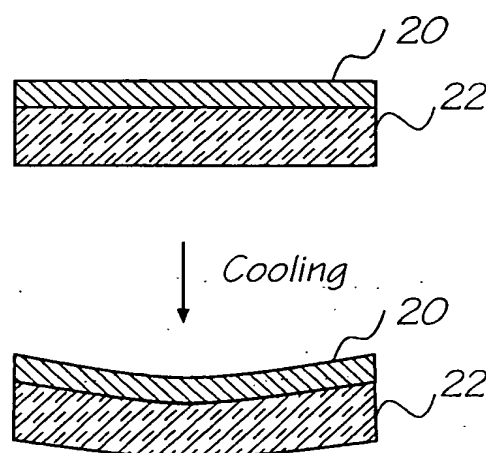


FIG. 5

TOTED 6240860

APPROVED	C.G.F.C.
BY	CLASS/SUBCLASS
DRAFTSMAN	

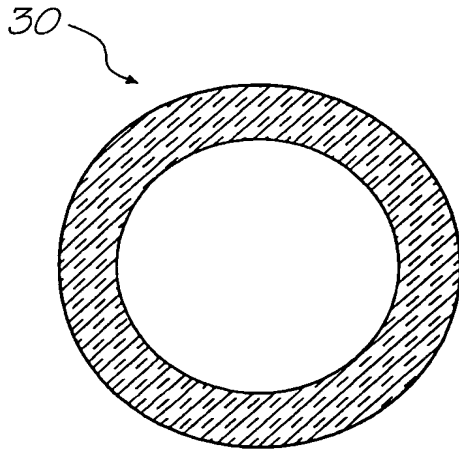


FIG. 6

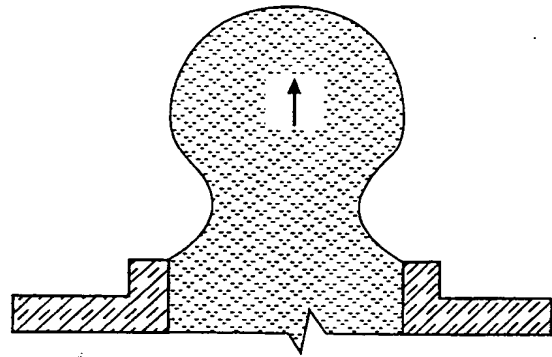


FIG. 7

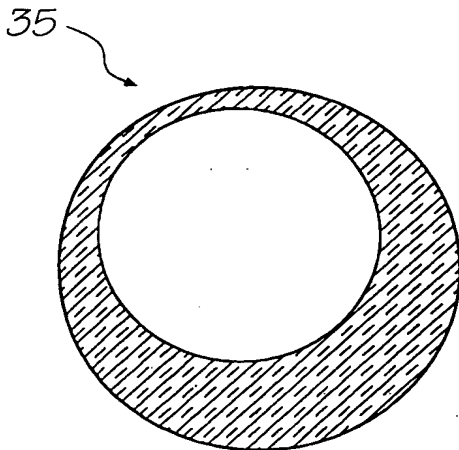


FIG. 8

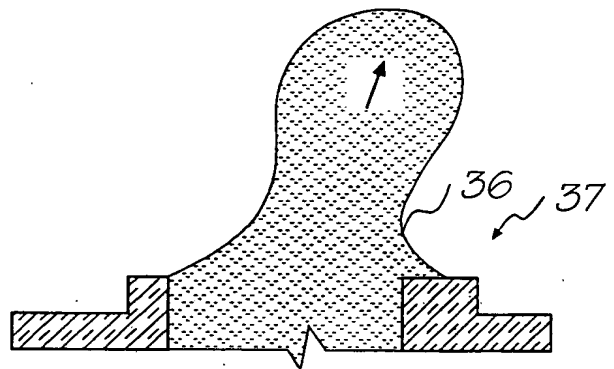


FIG. 9

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FIG. 10

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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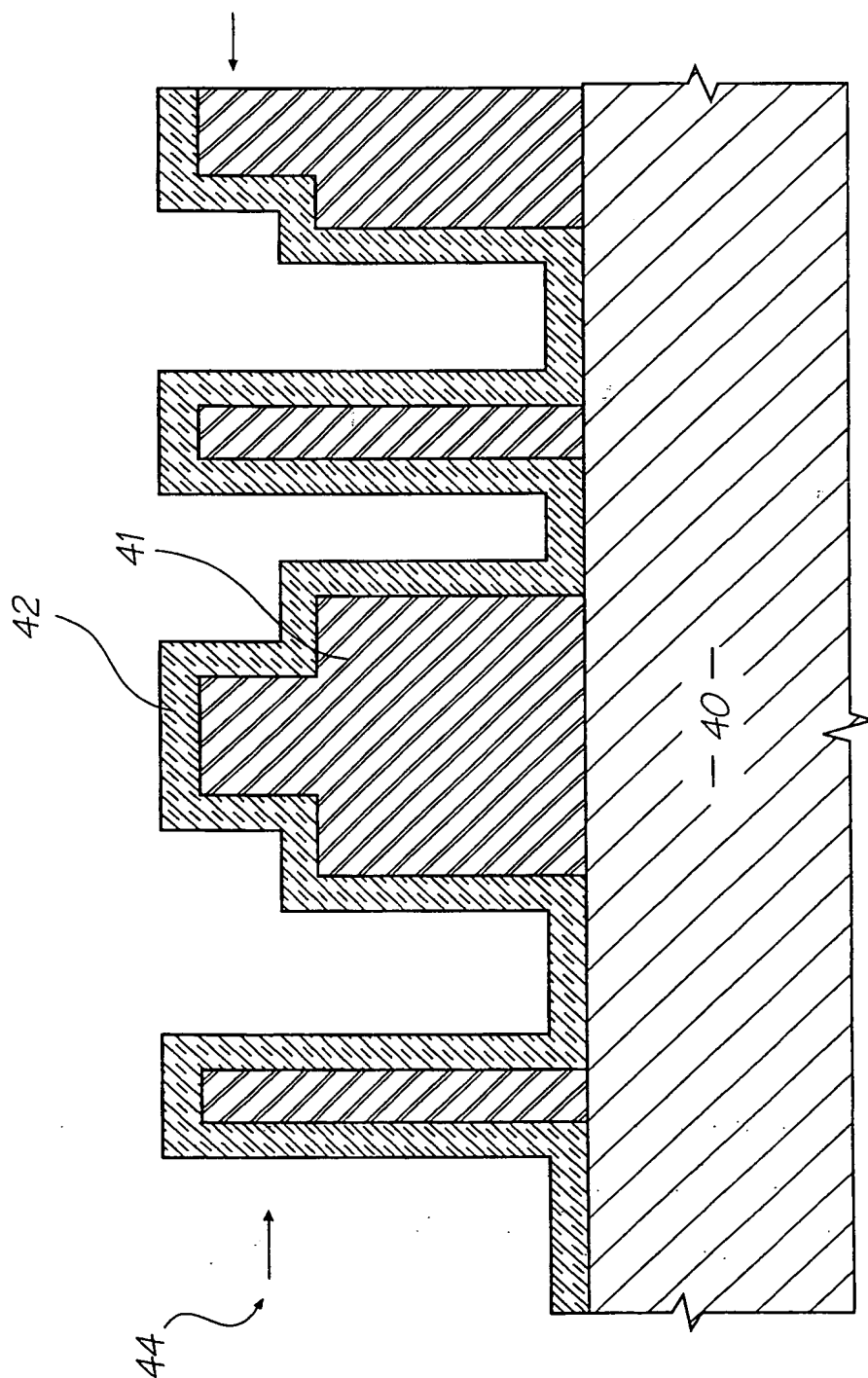


FIG. 10

FIG. 11

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

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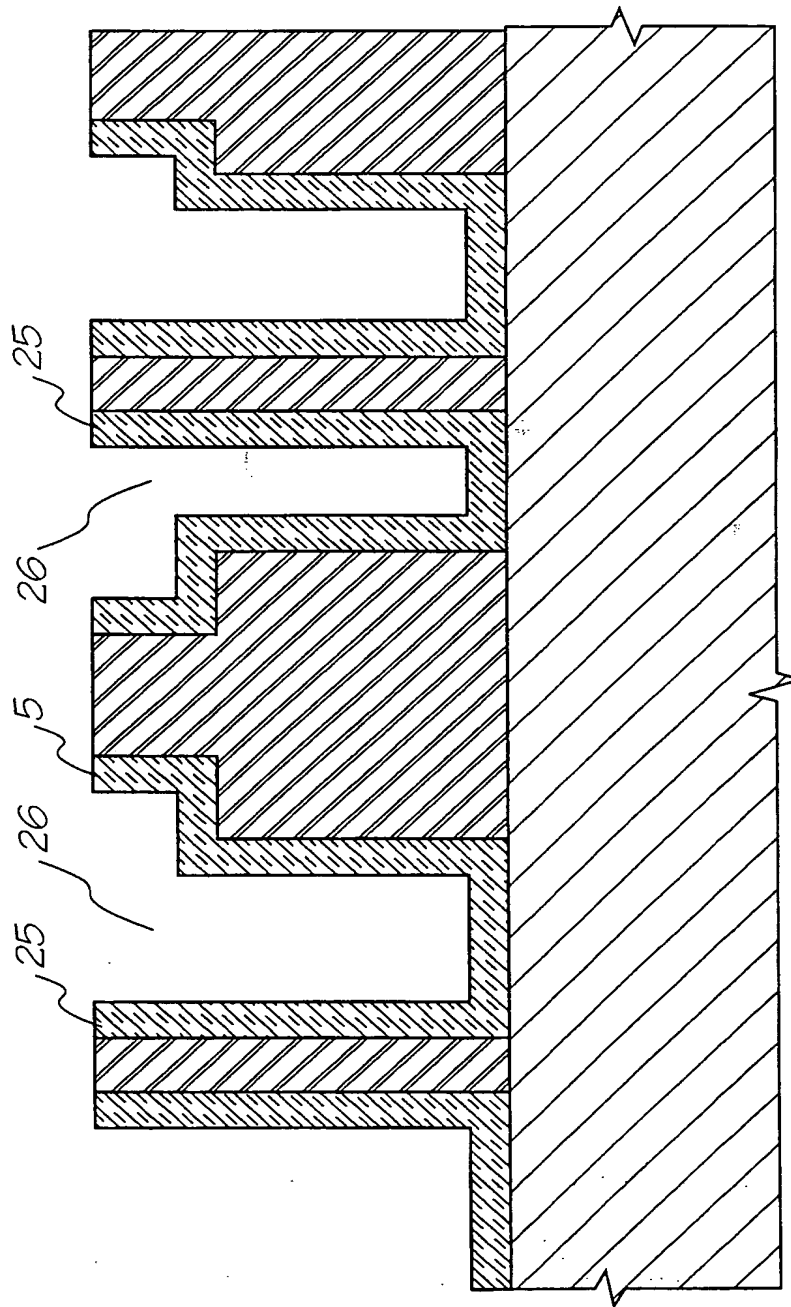


FIG. 11

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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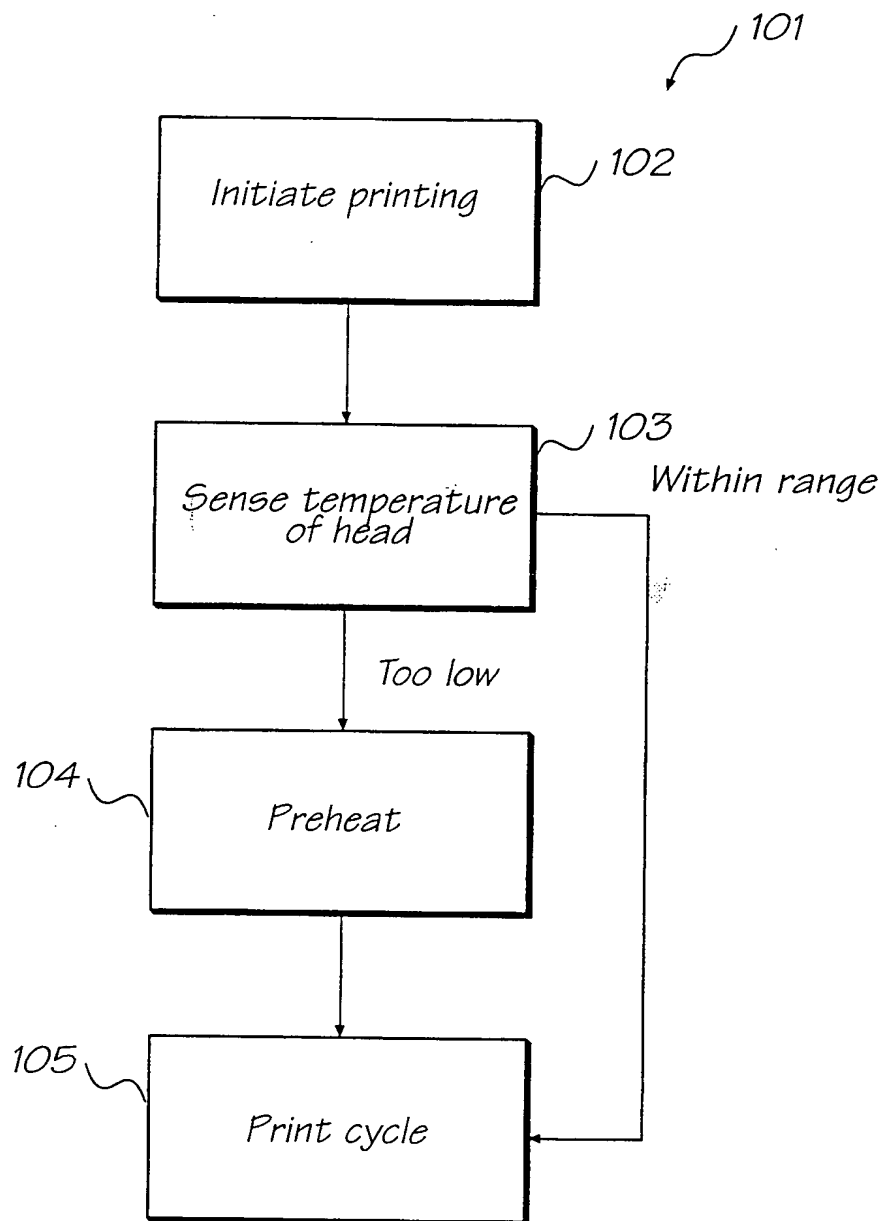


FIG. 12

FIG. 12

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

FIG. 13

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PCT/AU99/00894

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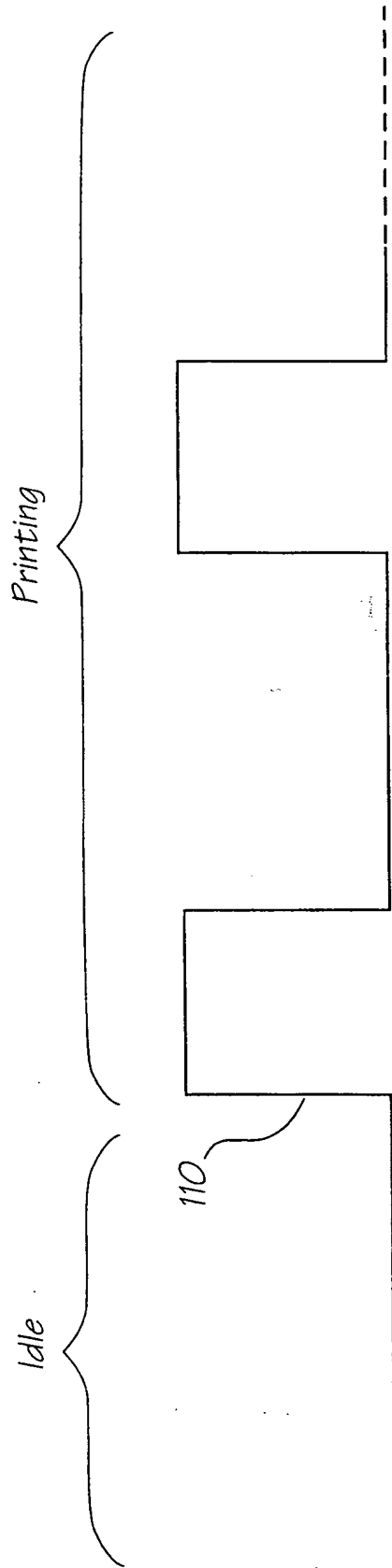


FIG. 13

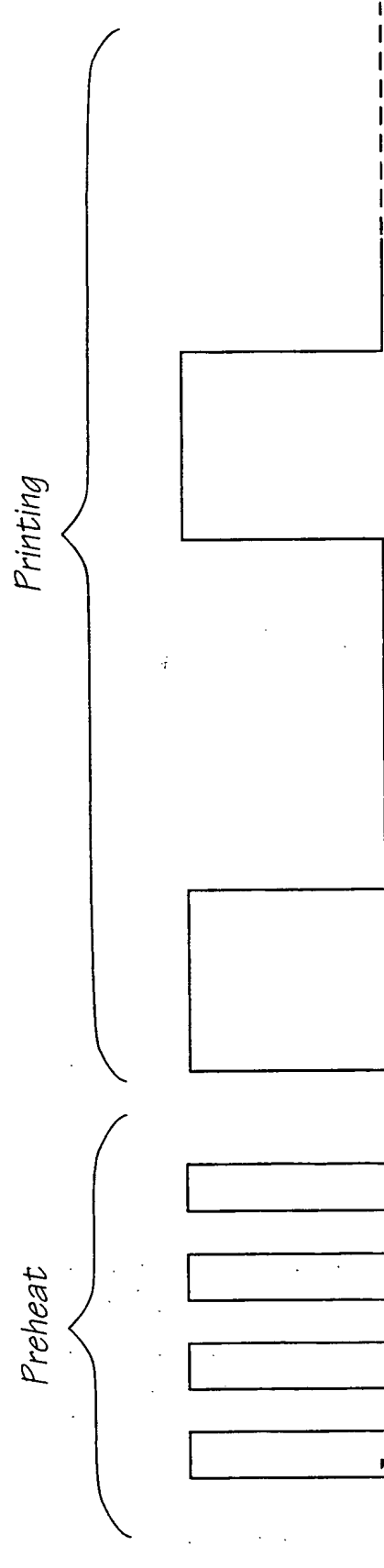


FIG. 14

FIG. 15

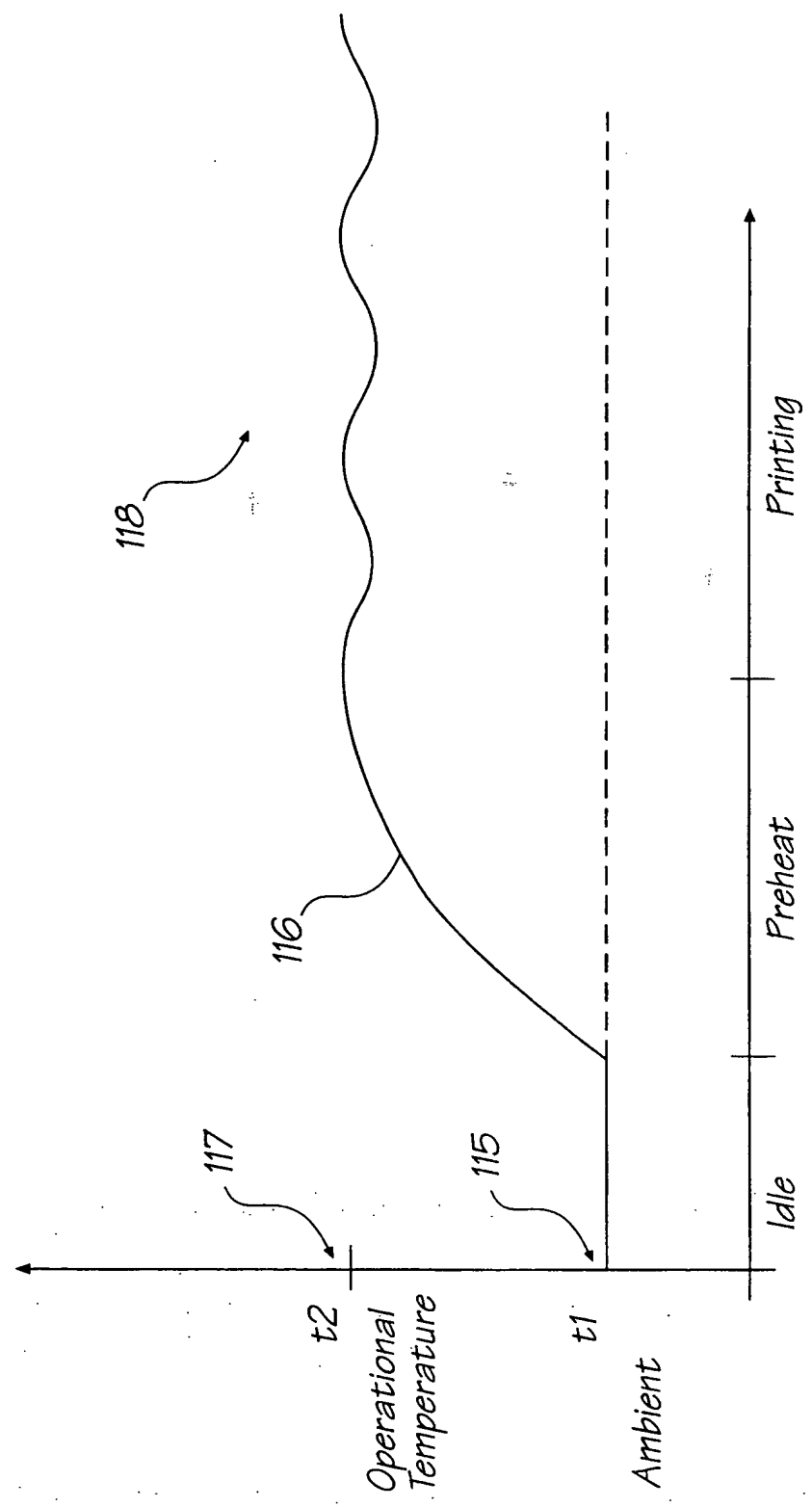


FIG. 15



FIG. 16

APPROVED	C.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

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PCT/AU99/00894

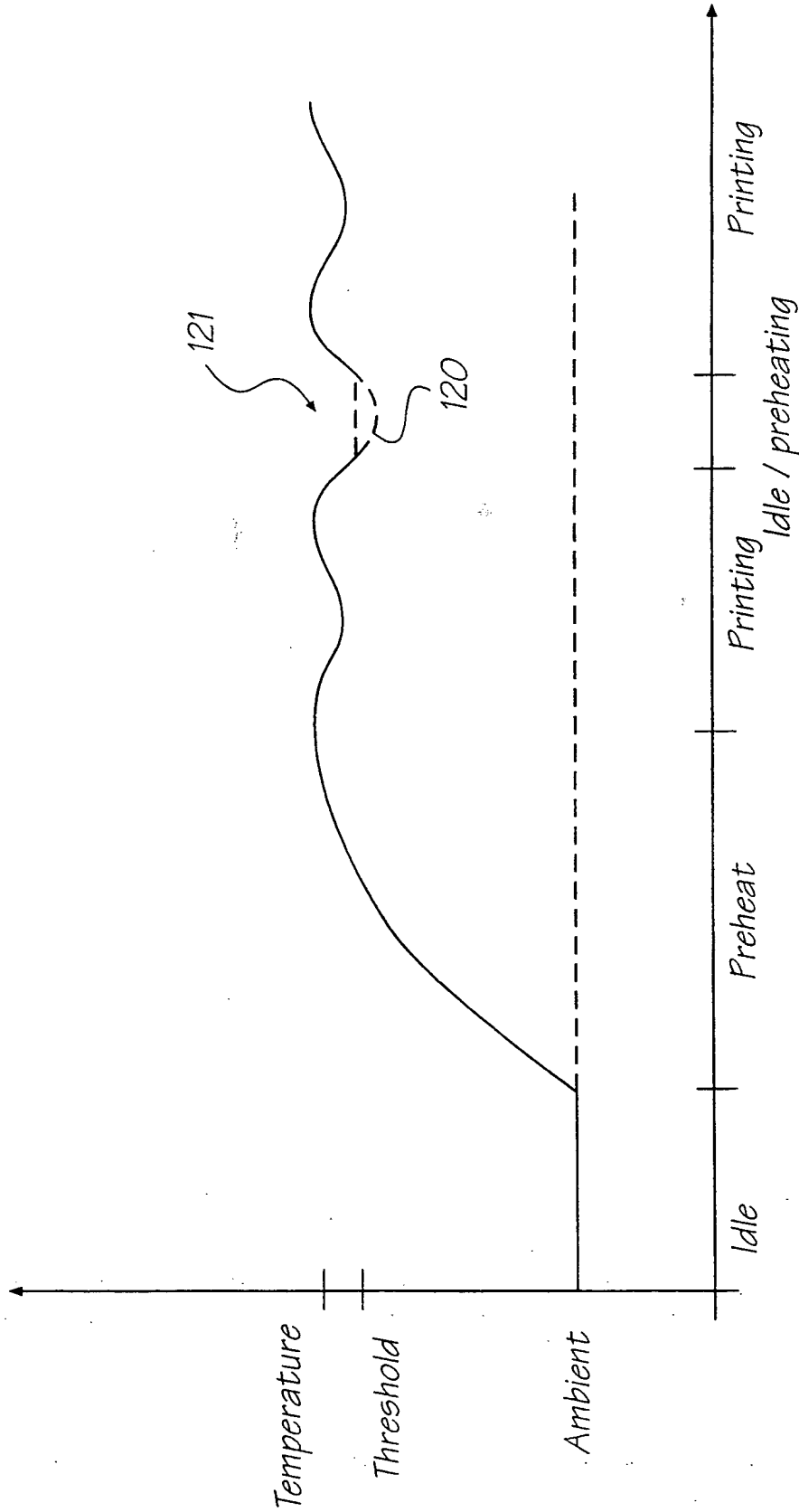


FIG. 16

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APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

PCT/AU99/00894

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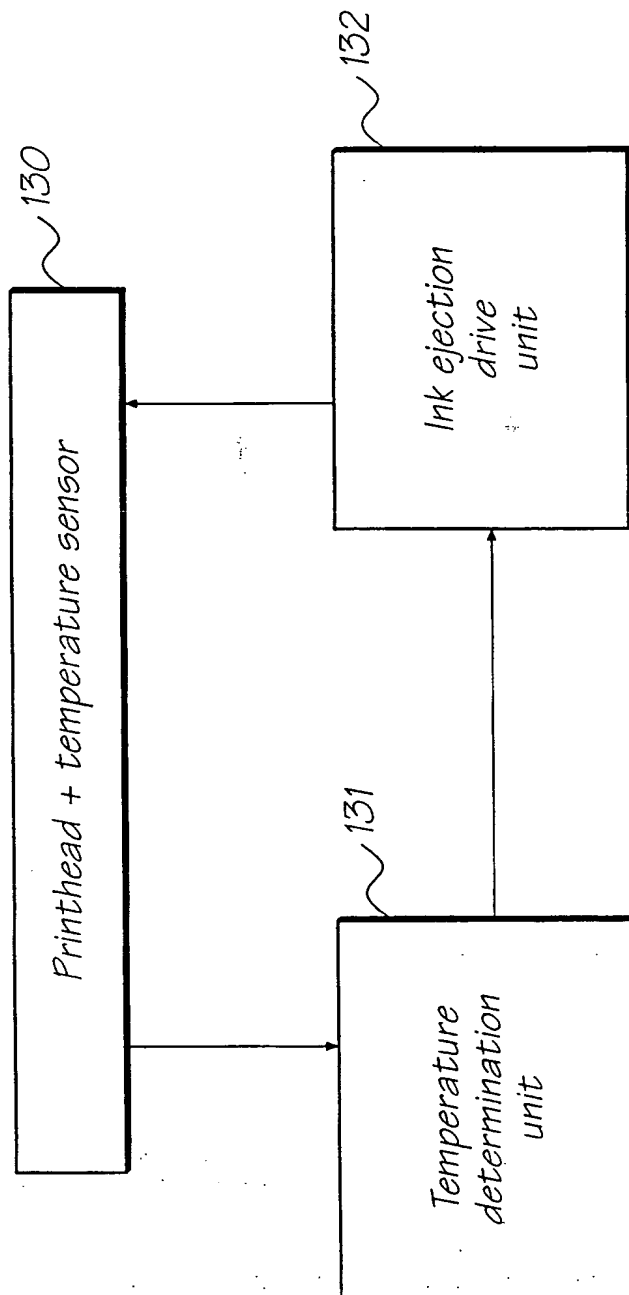


FIG. 17

FIG. 18

APPROVED	C.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

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9/80/297  
PCT/AU99/00894

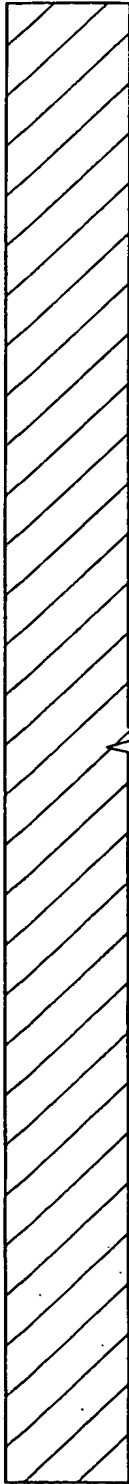
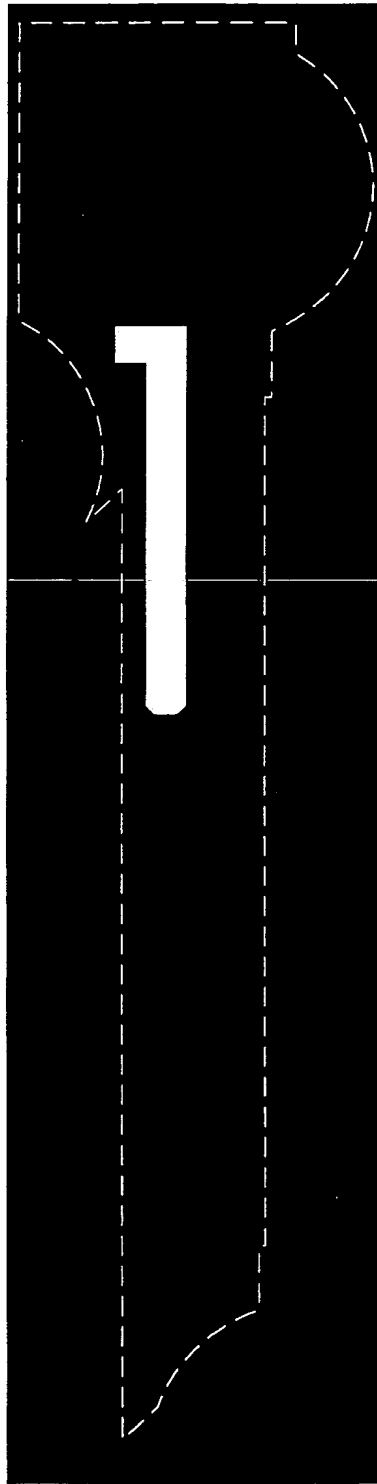


FIG. 18



N-Well mask

FIG. 19

210



Implant N-Well

FIG. 20

FIG. 21

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

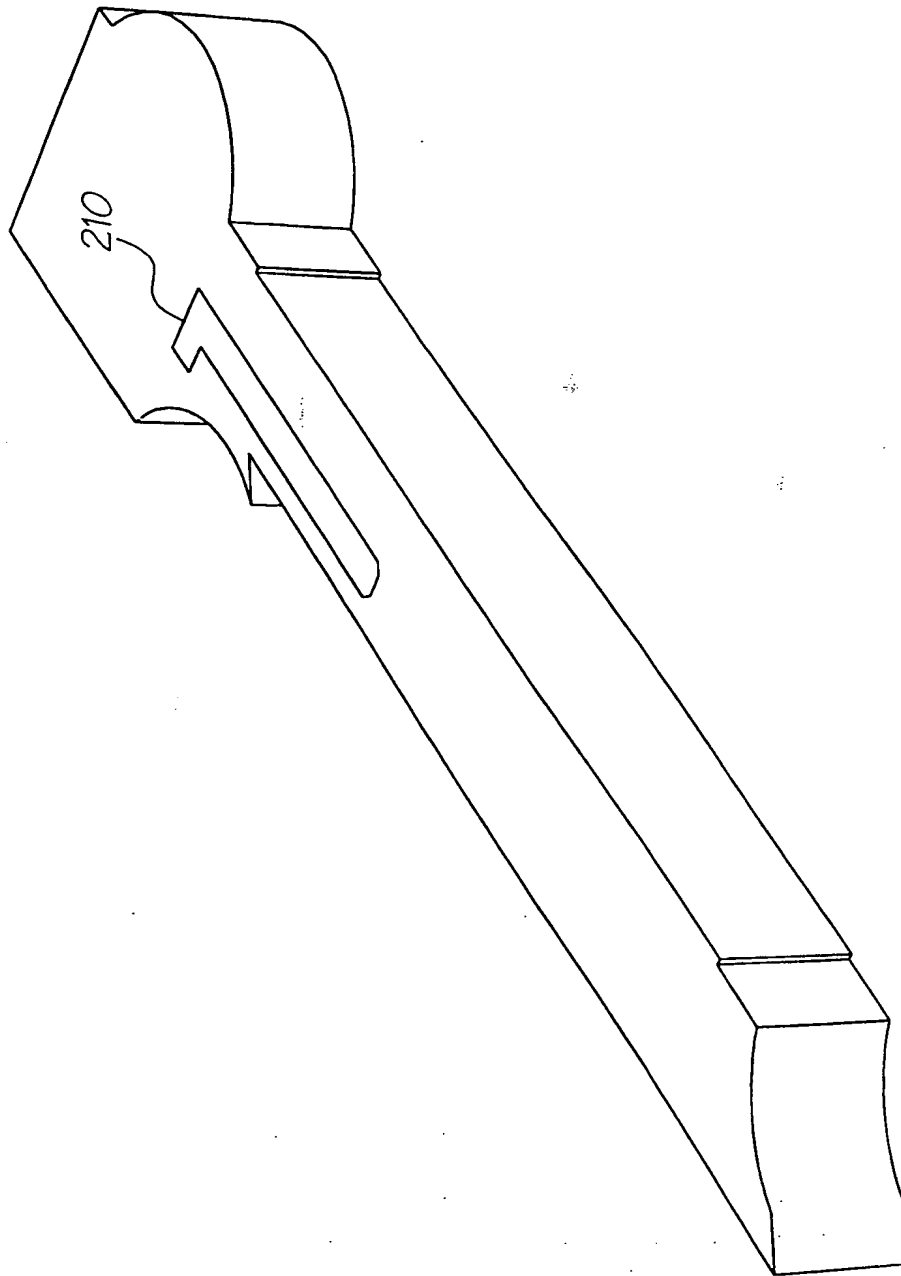


FIG. 21

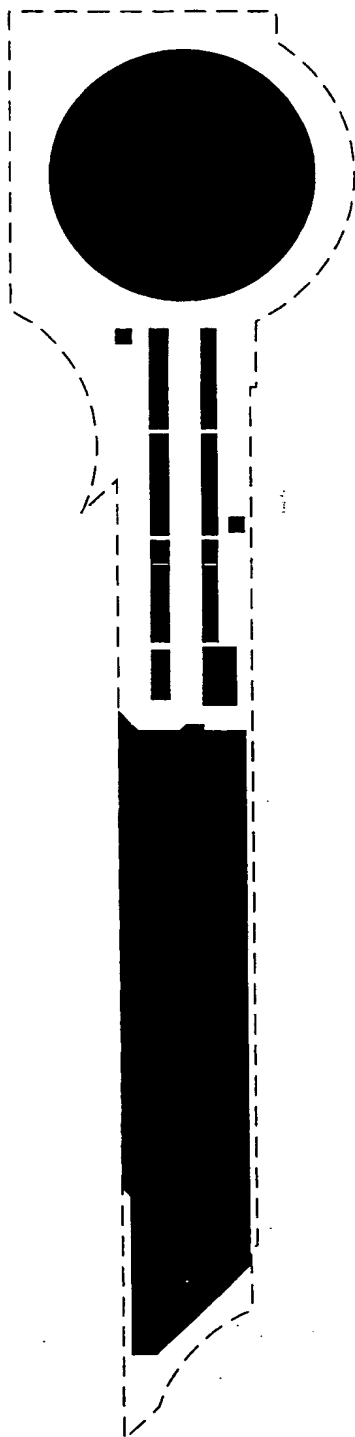
TOP SECRET 26240860

APPROVED	C.G. FIG.	
BY	CLASS	SUBCLASS
DRAFTSMAN		

WO 00/23279

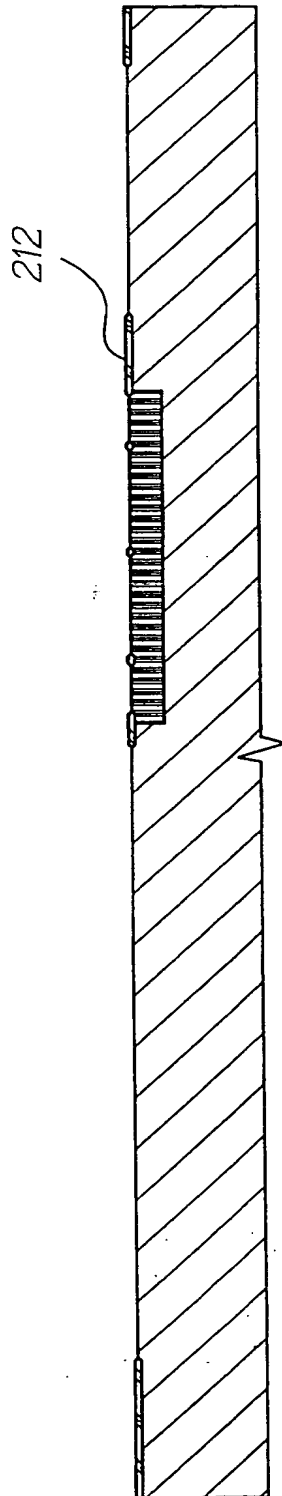
97807237  
PCT/AU99/00894

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Active mask

FIG. 22



Grow field oxide

FIG. 23

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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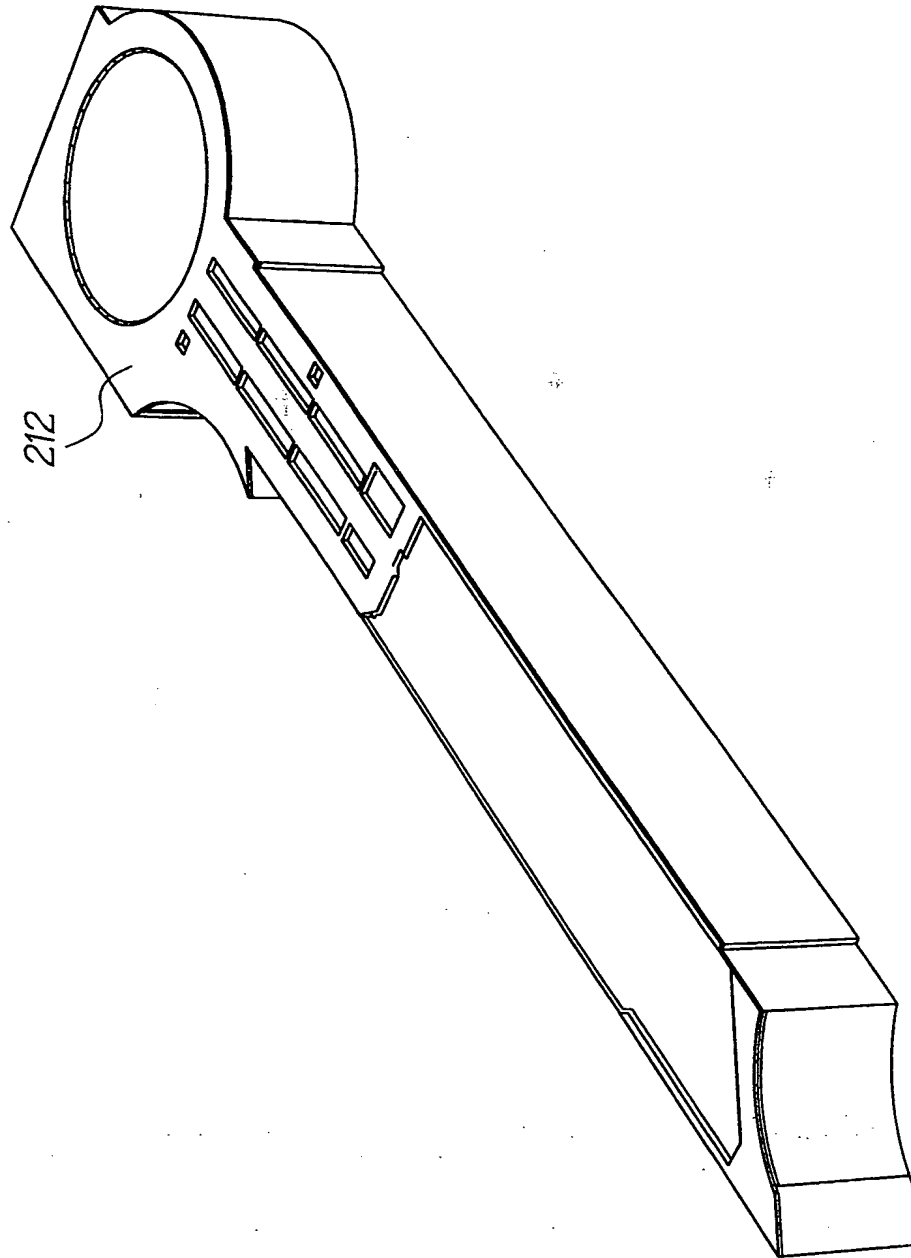
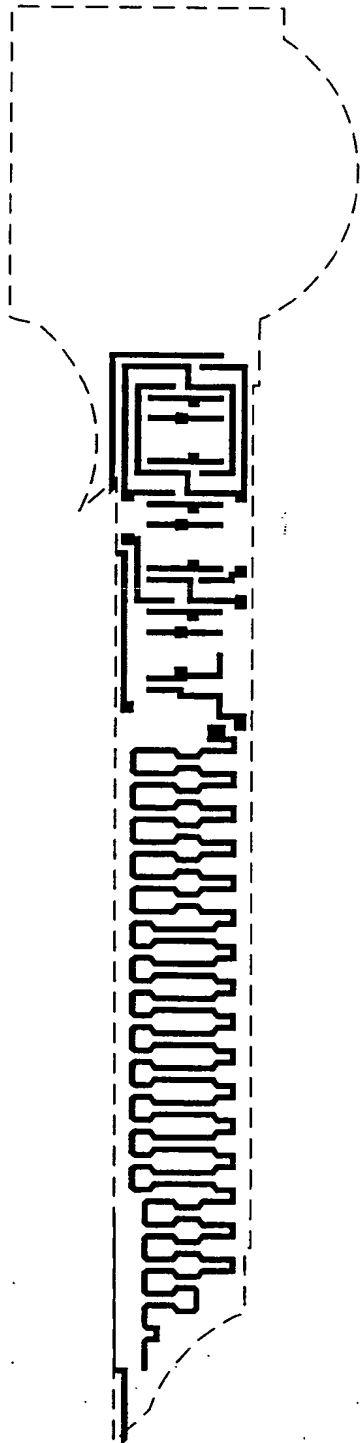


FIG. 24

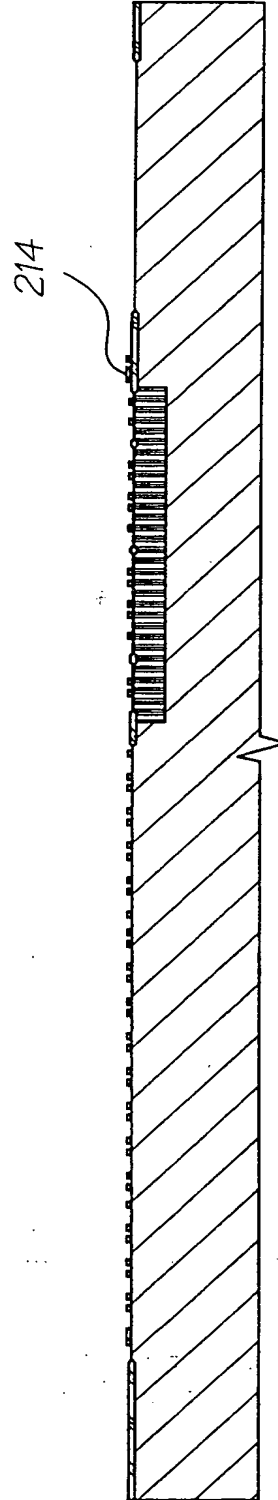
FIG. 24

APPROVED	C.G. FIG.
BY	CLASS SUB
DRAFTSMAN	



Poly mask

FIG. 25



Deposit poly

FIG. 26

APPROVED	O.G. FIG.
BY	CLASS. SUBC
DRAFTSMAN	

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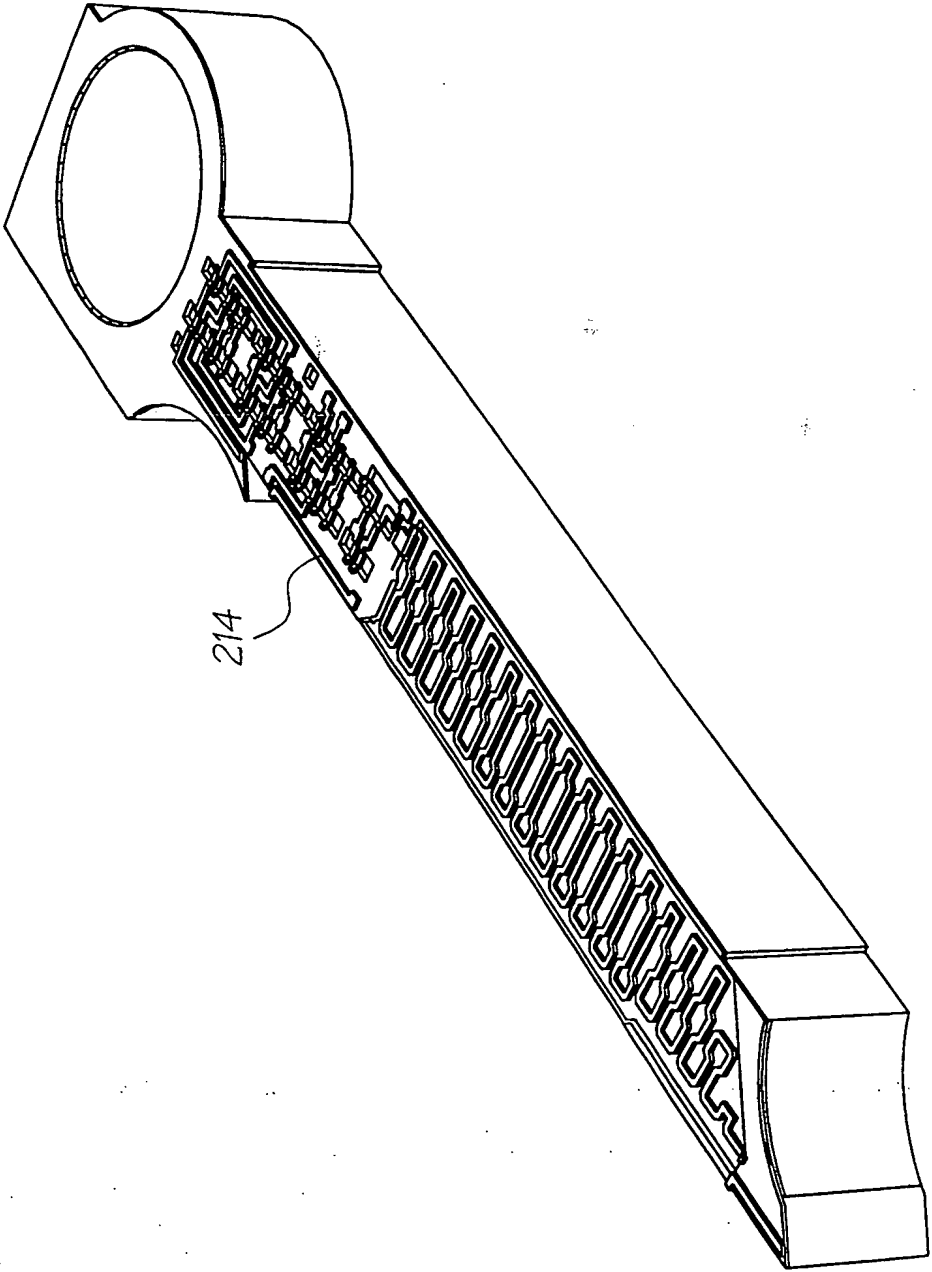


FIG. 27

FIG. 27



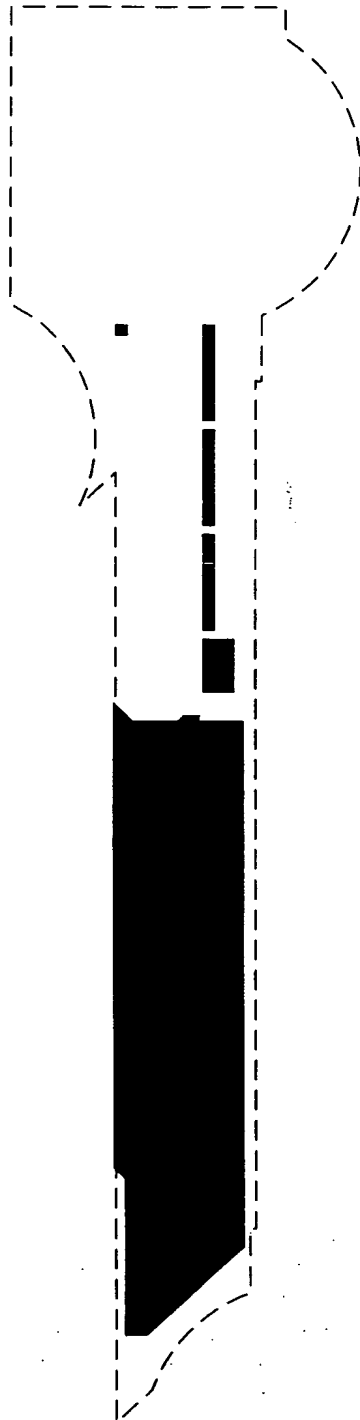
FIG. 28

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

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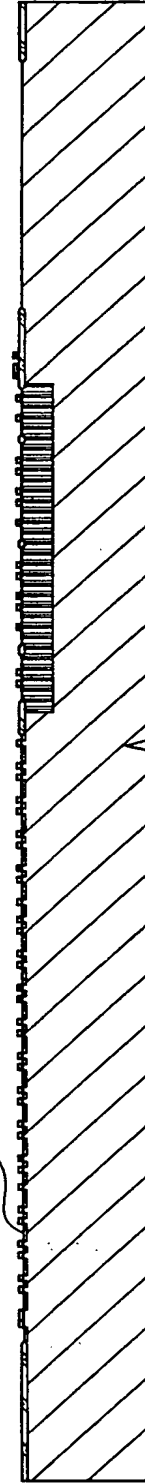
PCT/AU99/00894



n+ mask

FIG. 28

216



n+ implant

FIG. 29

APPROVED	C.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

9/807297  
PCT/AU99/00894

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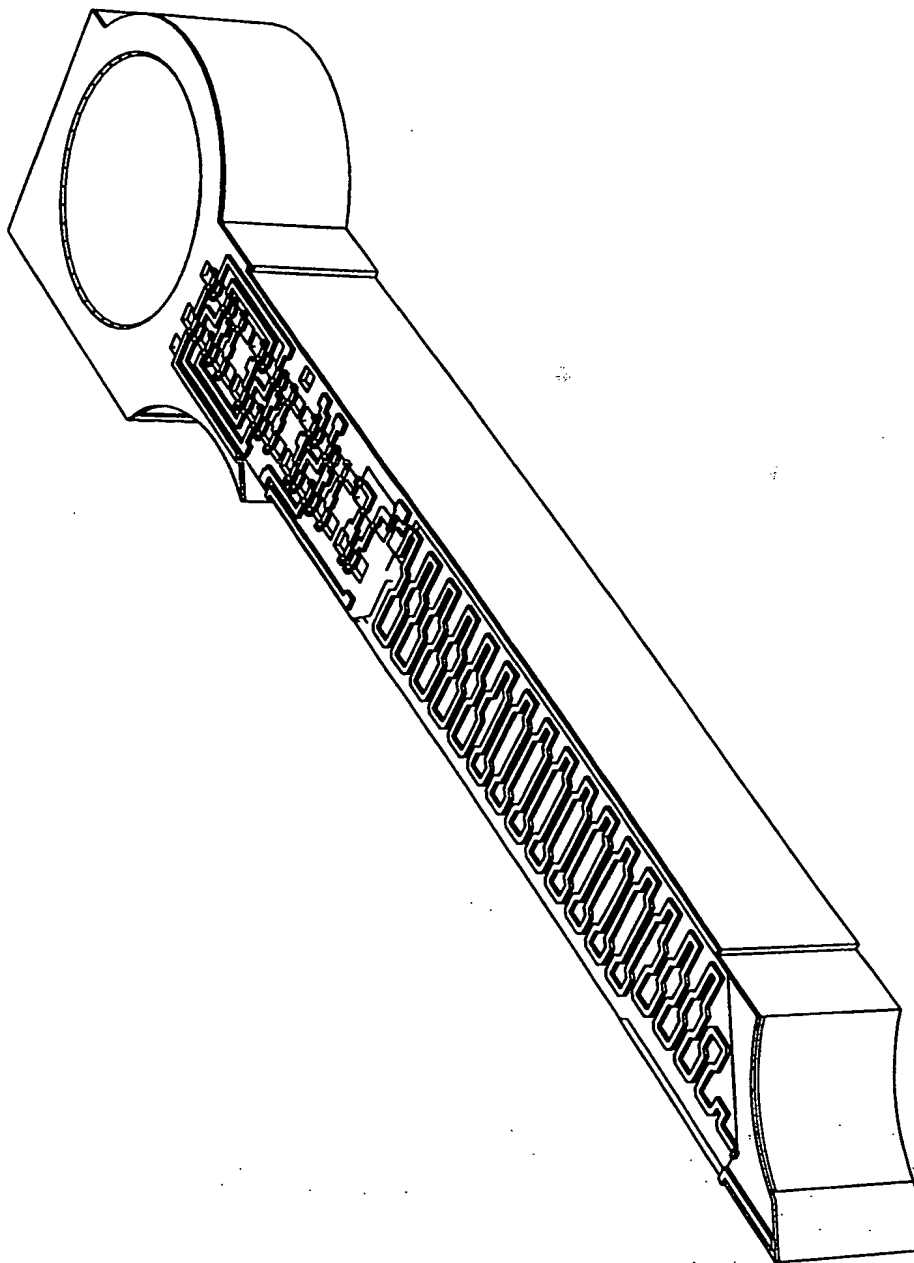


FIG. 30

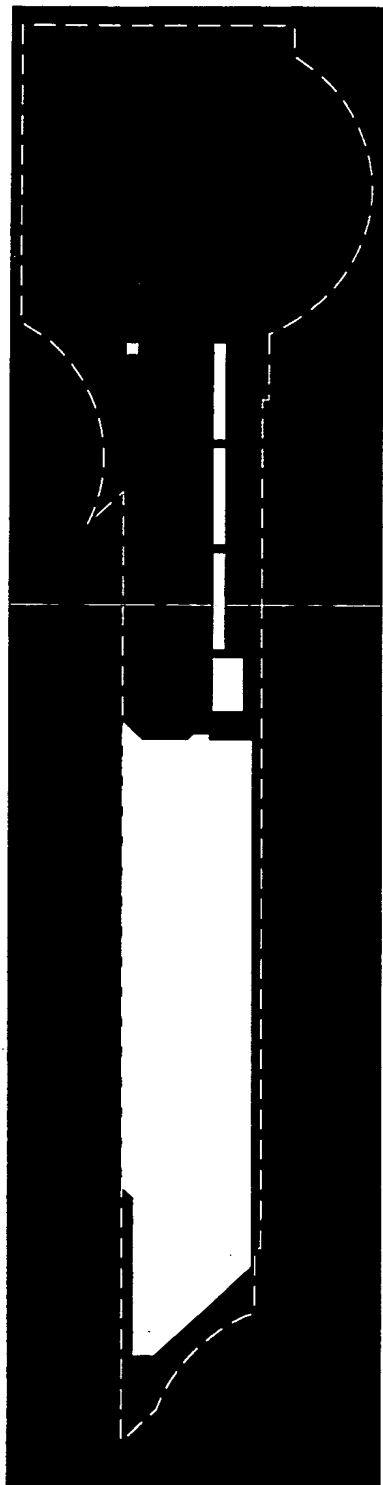
T07E80" 26220860

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

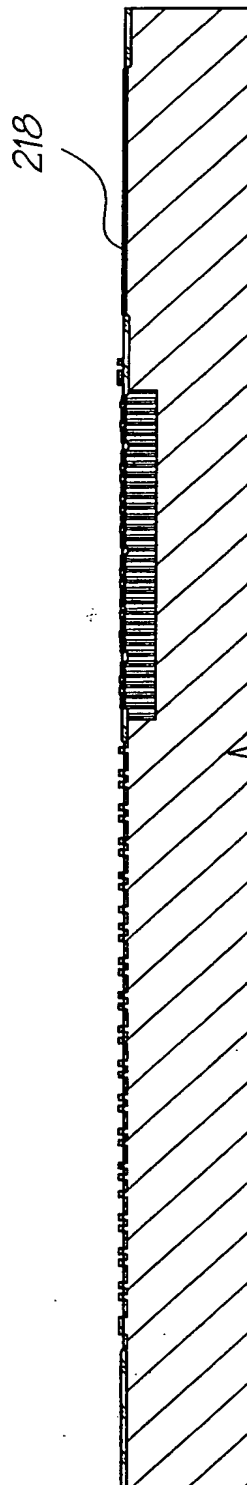
PCT/AU99/00894

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*p+ mask*

FIG. 31



*p+ implant*

FIG. 32

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APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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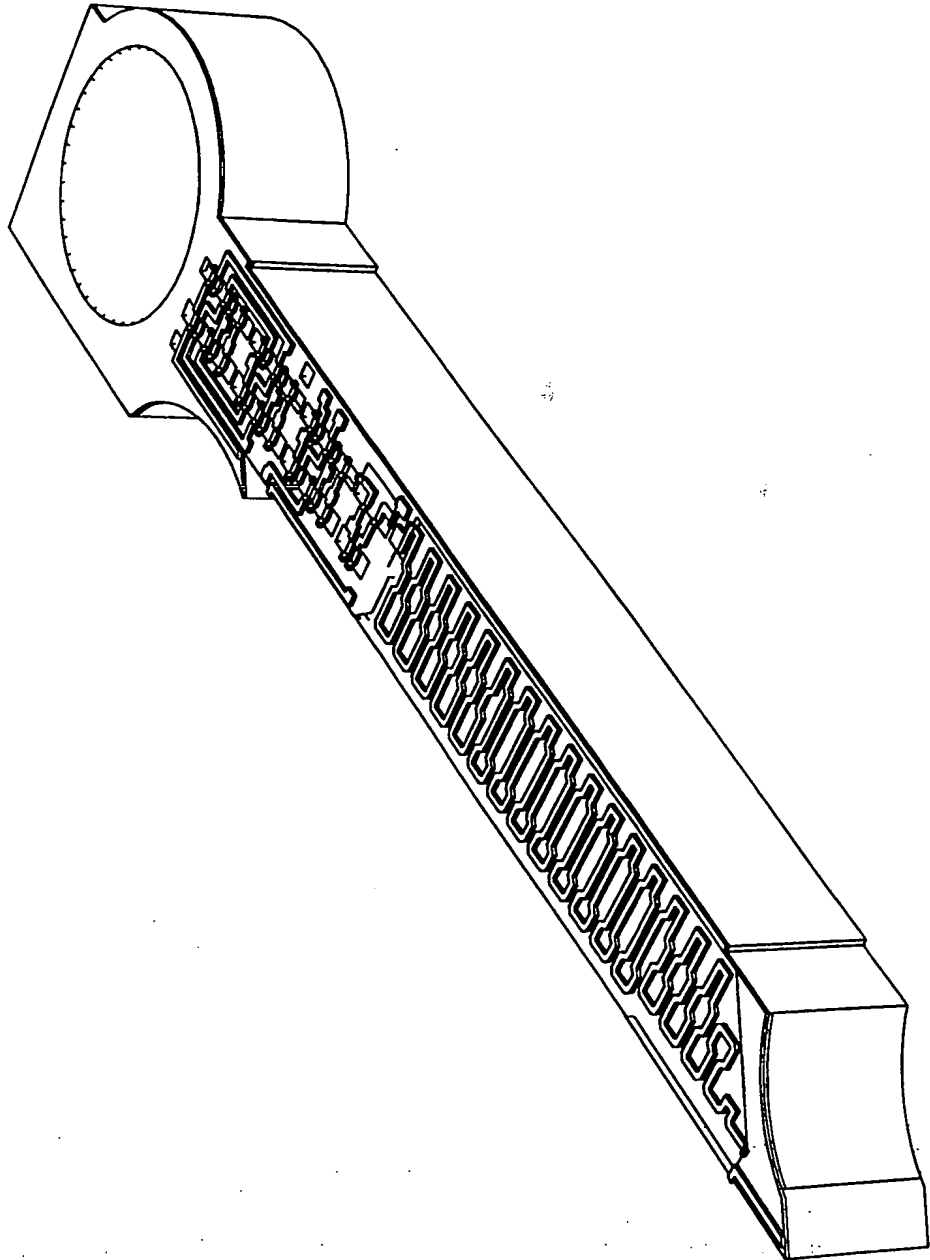


FIG. 33

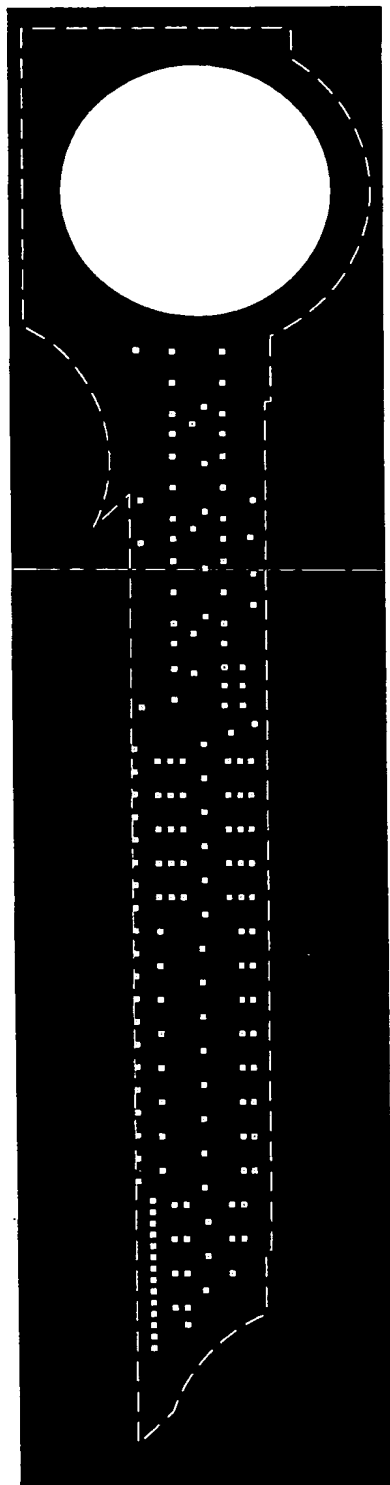
FIG. 34

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

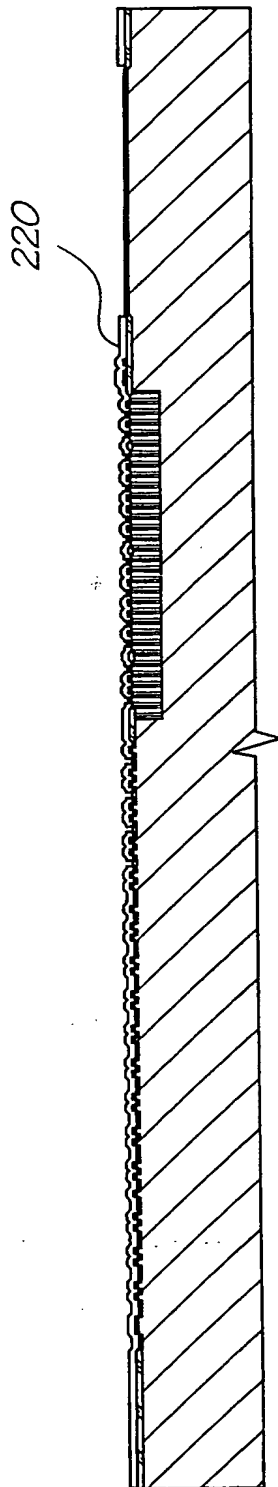
PCT/AU99/00894

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Contacts mask

FIG. 34



Deposit ILD 1, etch contacts

FIG. 35

APPROVED	O.G. FIG.
BY	CLASS. SUBCLAS.
DRAFTSMAN	

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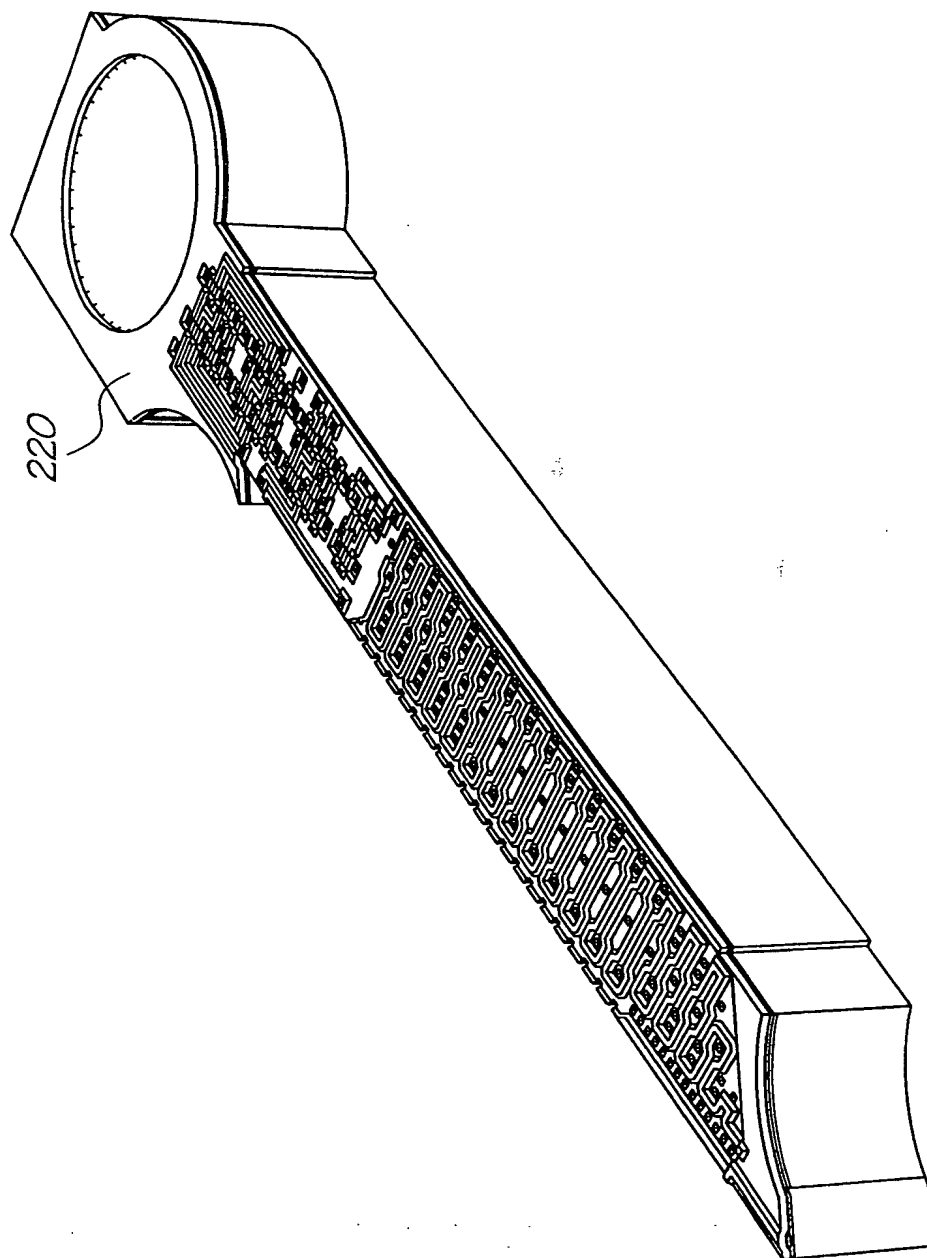
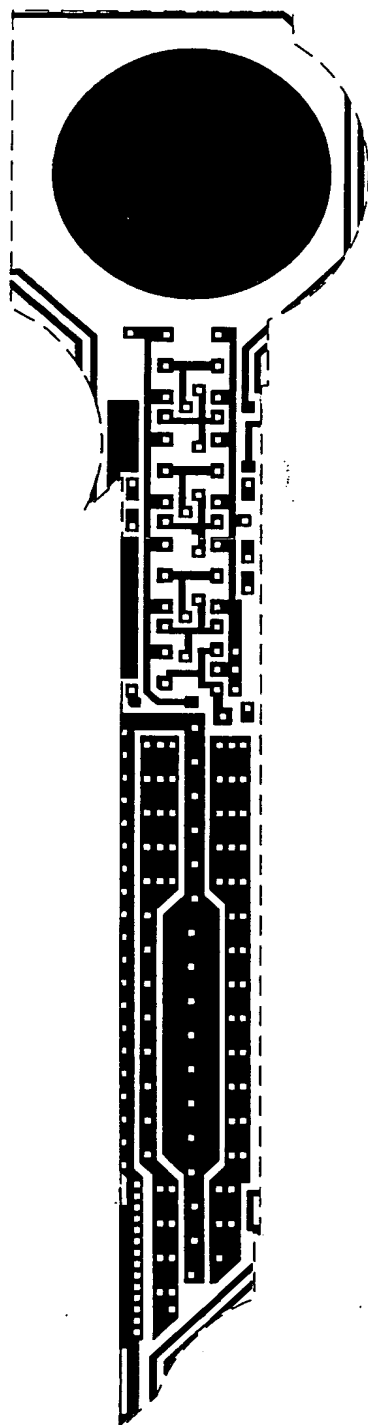


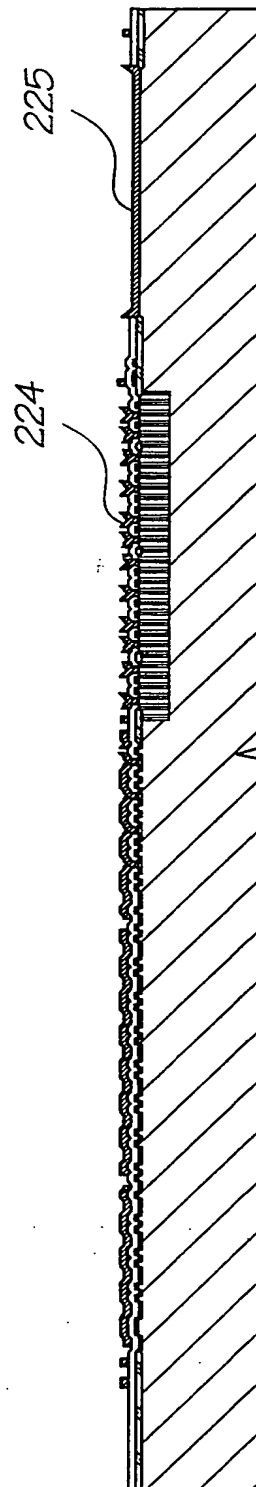
FIG. 36

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Metal 1 mask

FIG. 37



Deposit Metal 1

FIG. 38

APPROVED	C.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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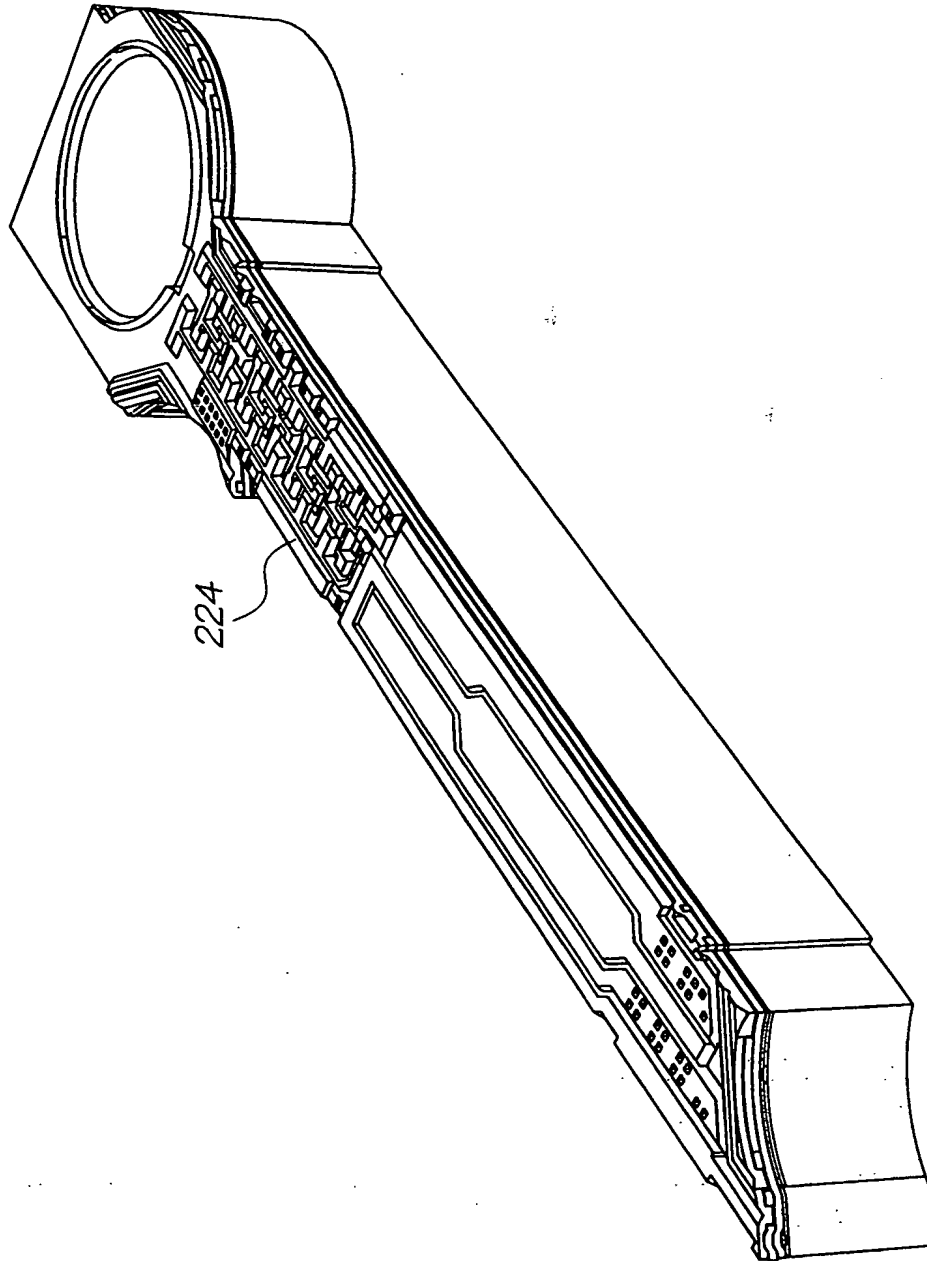


FIG. 39

FIG. 39



TOP SECRET 26220850

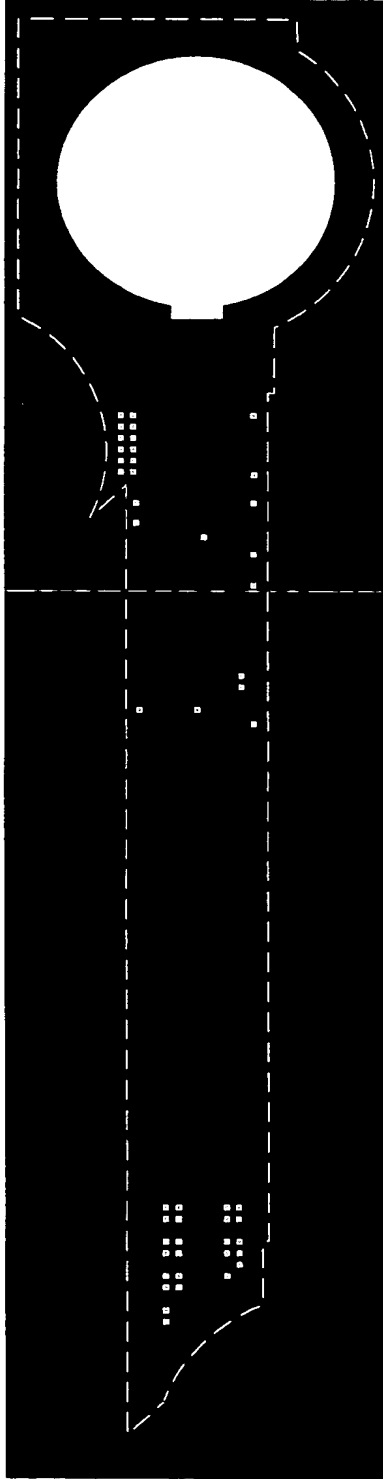
APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

09/65/227

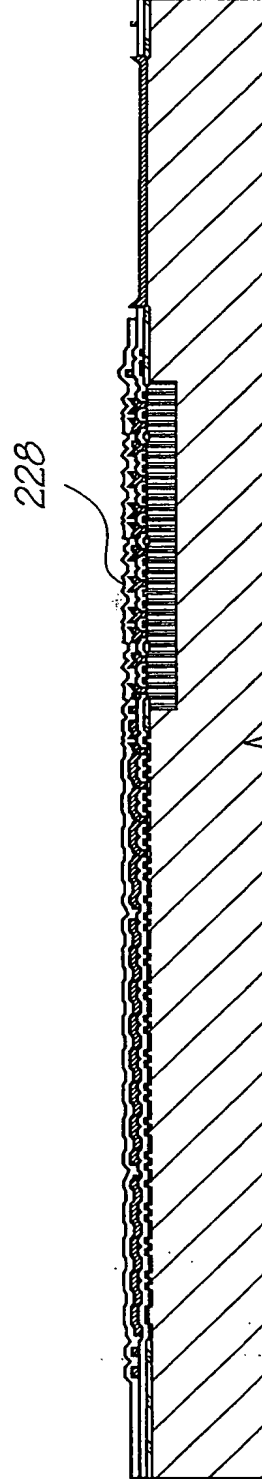
PCT/AU99/00894

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Via 1 mask

FIG. 40



Deposit ILD 2, etch vias

FIG. 41

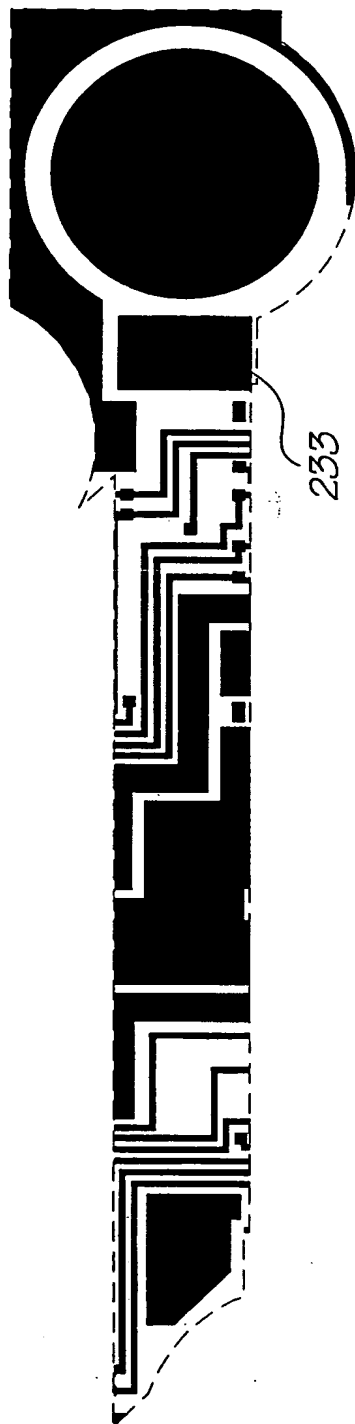
TOTERO 26220860

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

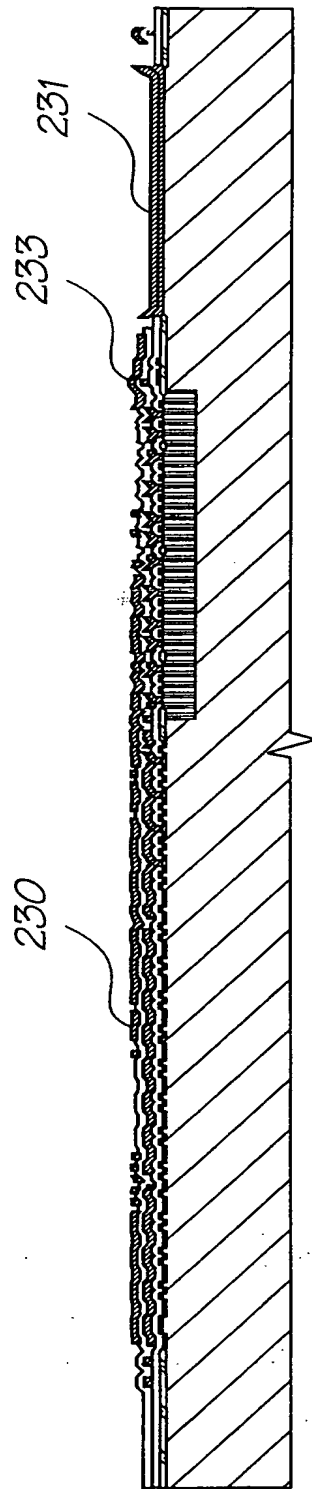
PCT/AU99/00894

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Metal 2 mask

FIG. 42



Deposit metal 2

FIG. 43

APPROVED BY DRAFTSMAN	O.G. FIG.
	CLASS/SUBCLASS

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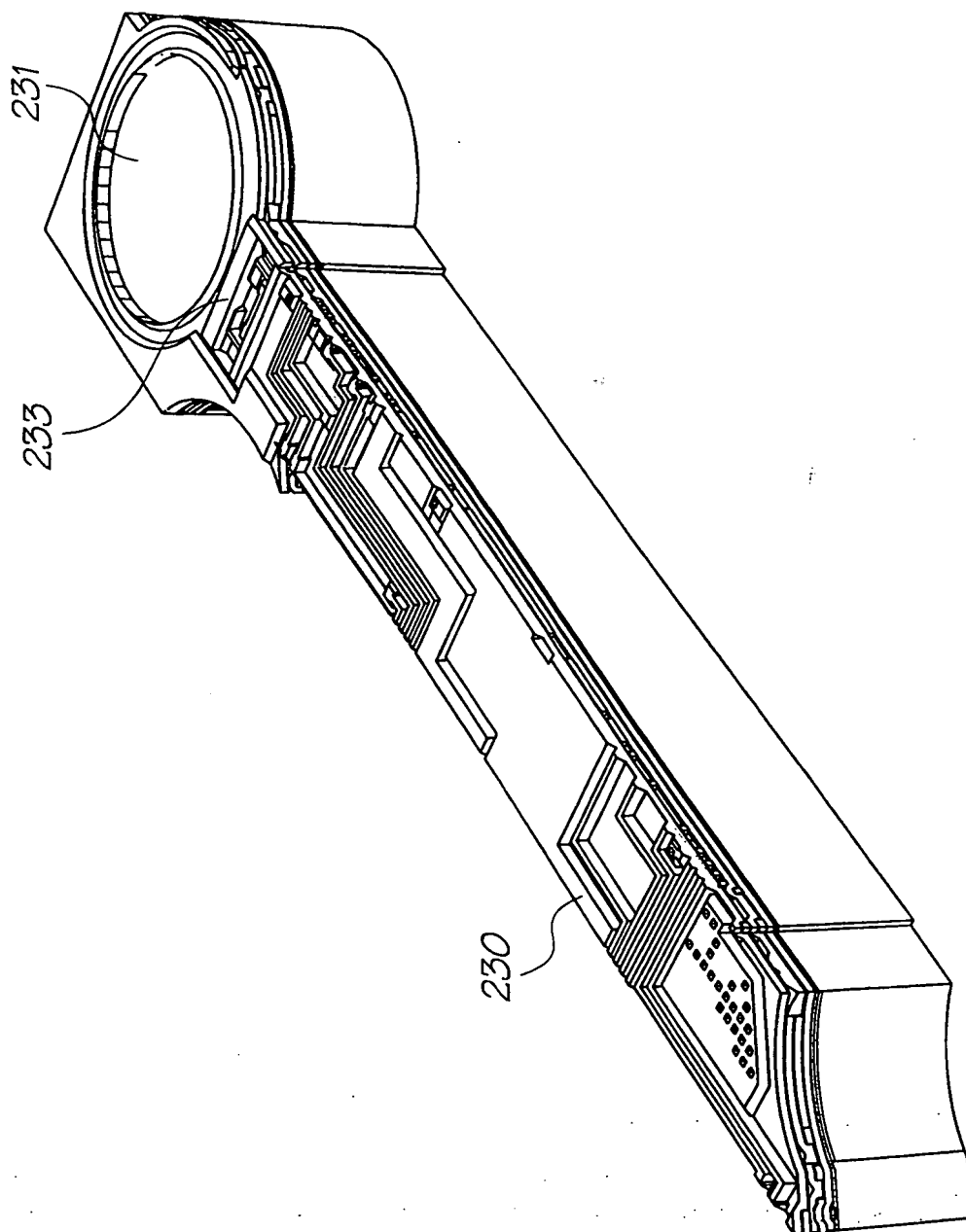


FIG. 44

FIG. 44

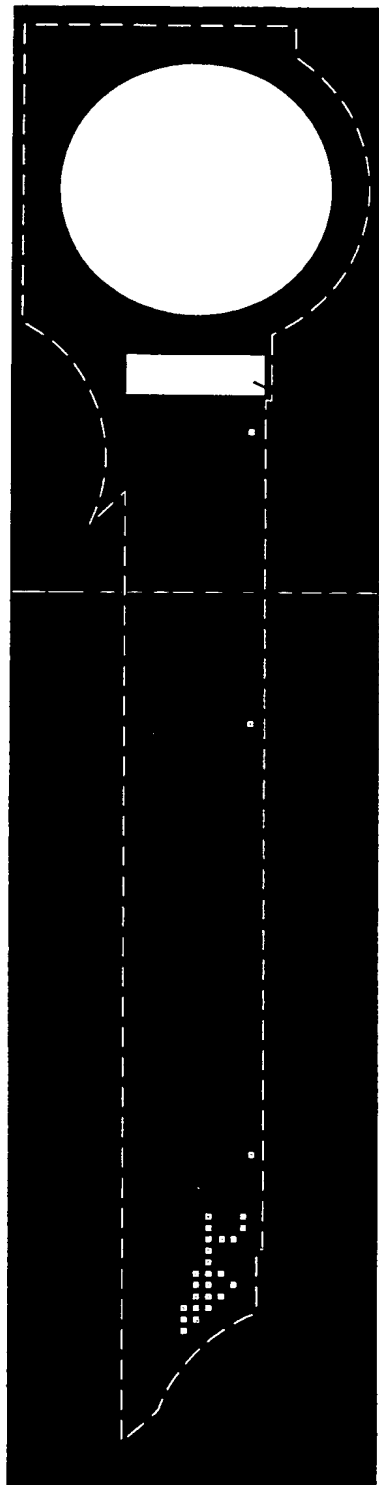
FIG. 28 26240260

APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

WO 00/23279

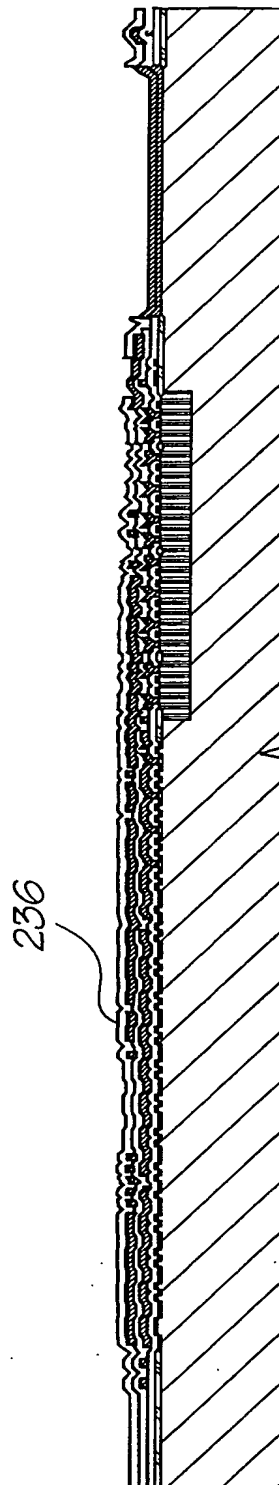
PCT/AU99/00894

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Via 2 mask

FIG. 45



Deposit ILD 3, etch vias

FIG. 46

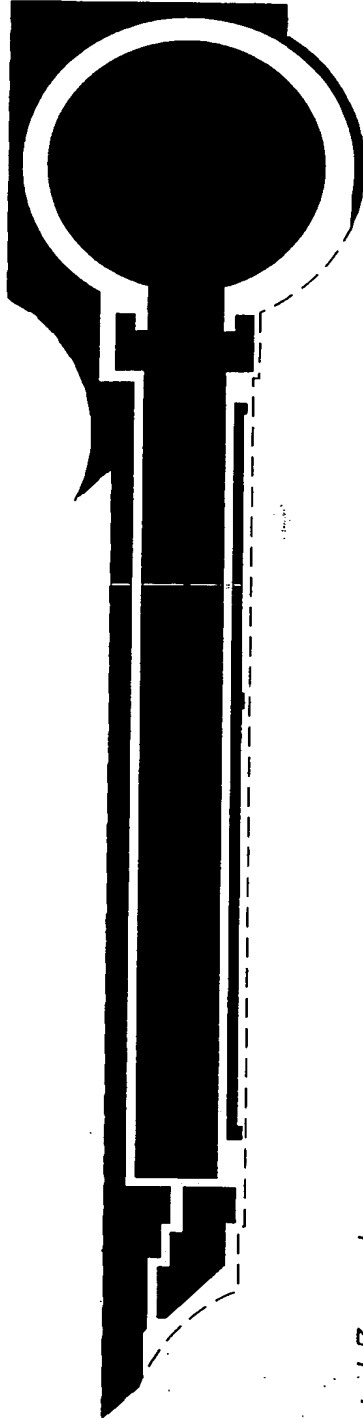
APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

09/807297

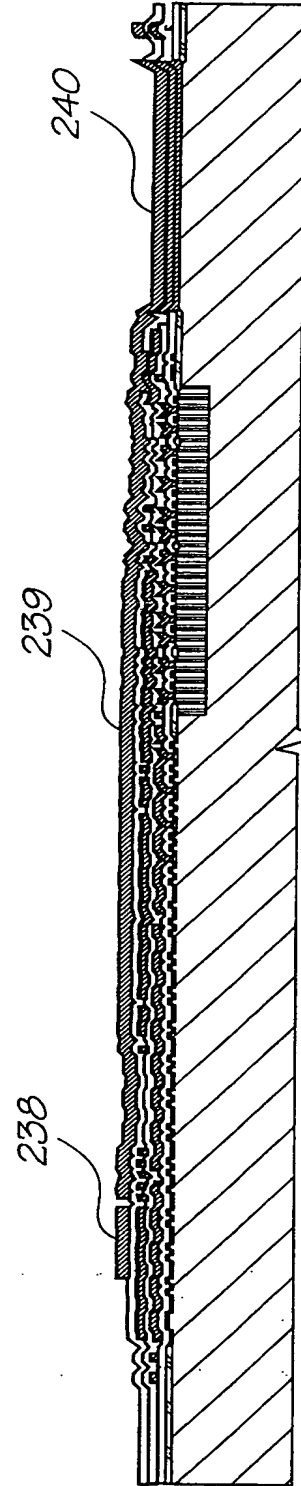
PCT/AU99/00894

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Metal 3 mask

FIG. 47



Deposit metal 3

FIG. 48

FIG. 47

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APPROVED	O.G. FIG.	CLASS/SUBCLASS
BY	CLASS/SUBCLASS	BY
DRAFTSMAN		DRAFTSMAN

FIG. 49

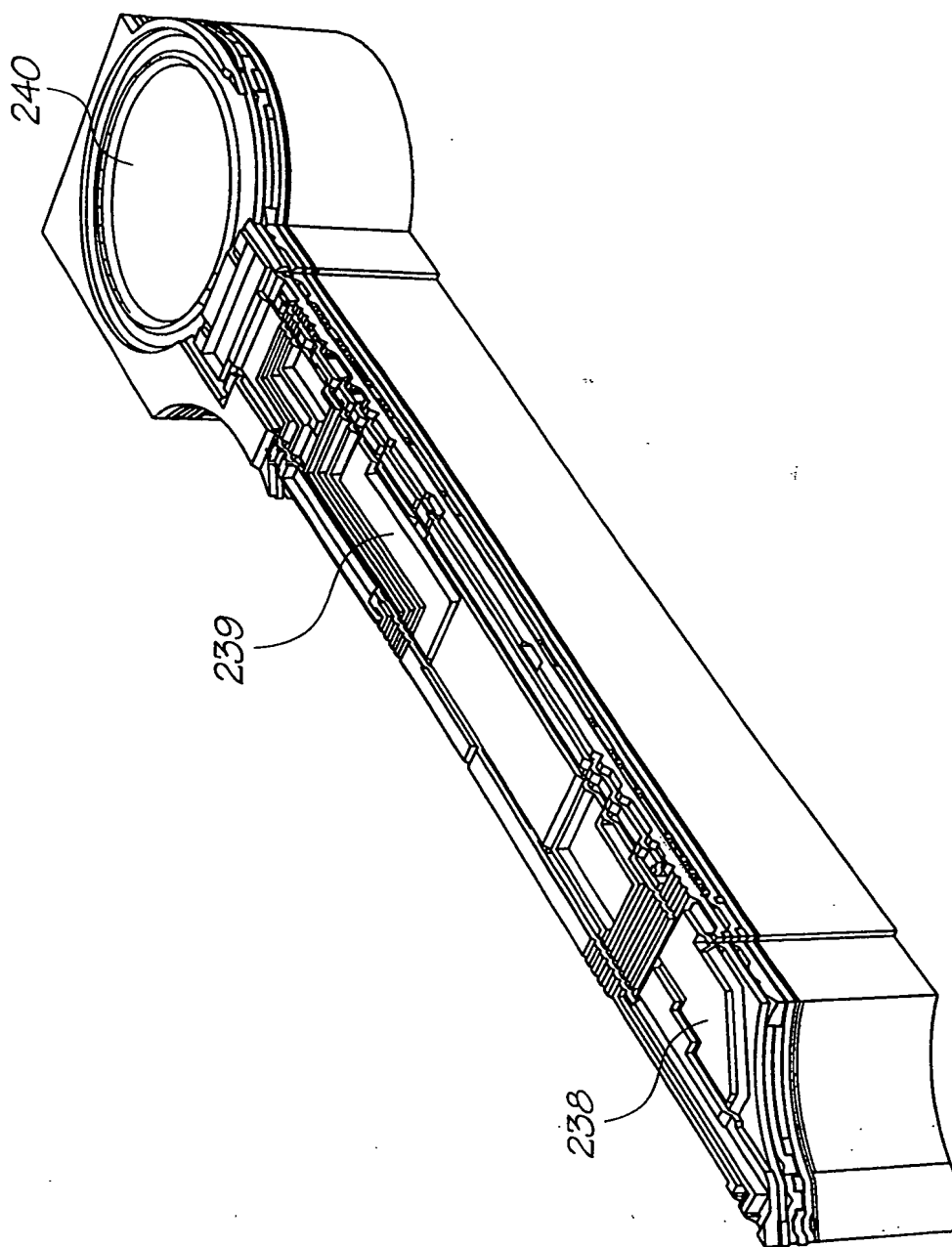
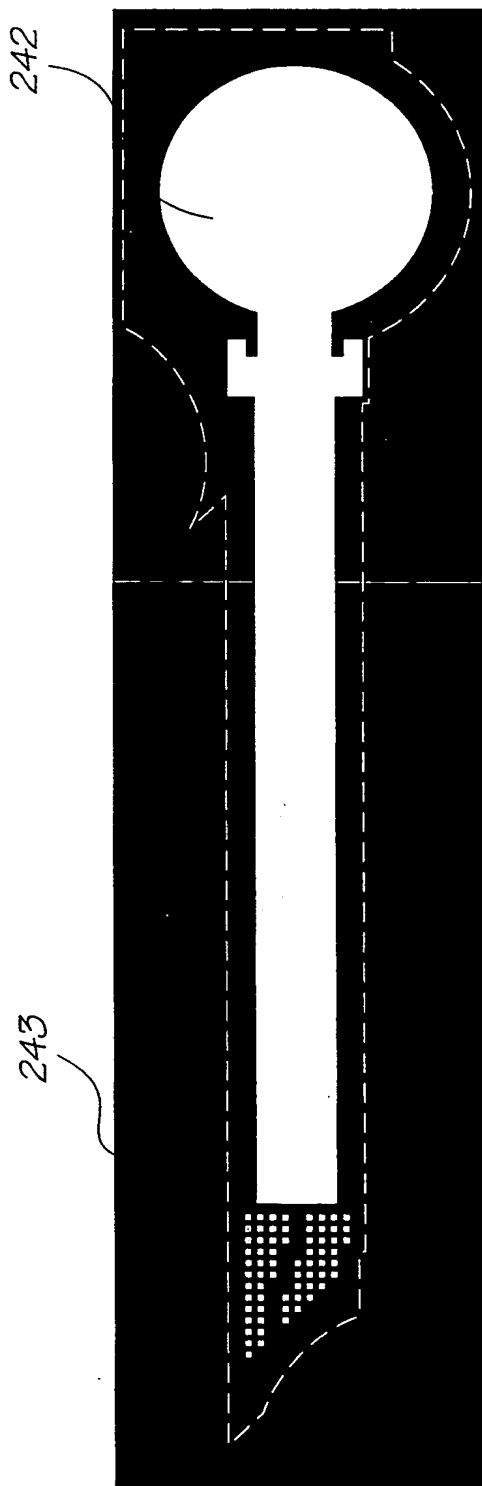


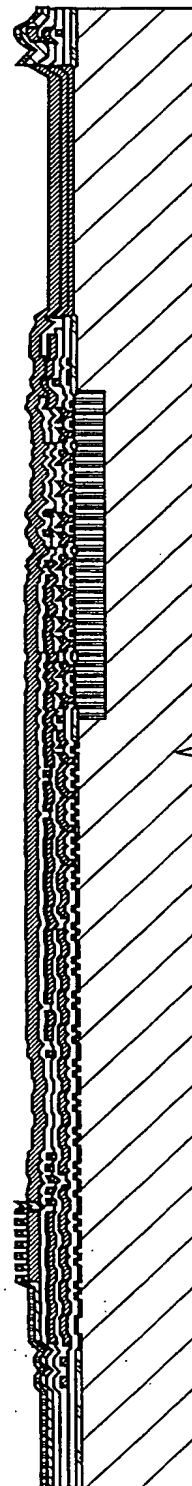
FIG. 49

APPROVED	C.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	



Via 3 / Passivation mask

FIG. 50



Deposit passivation oxide & nitride, etch vias

FIG. 51

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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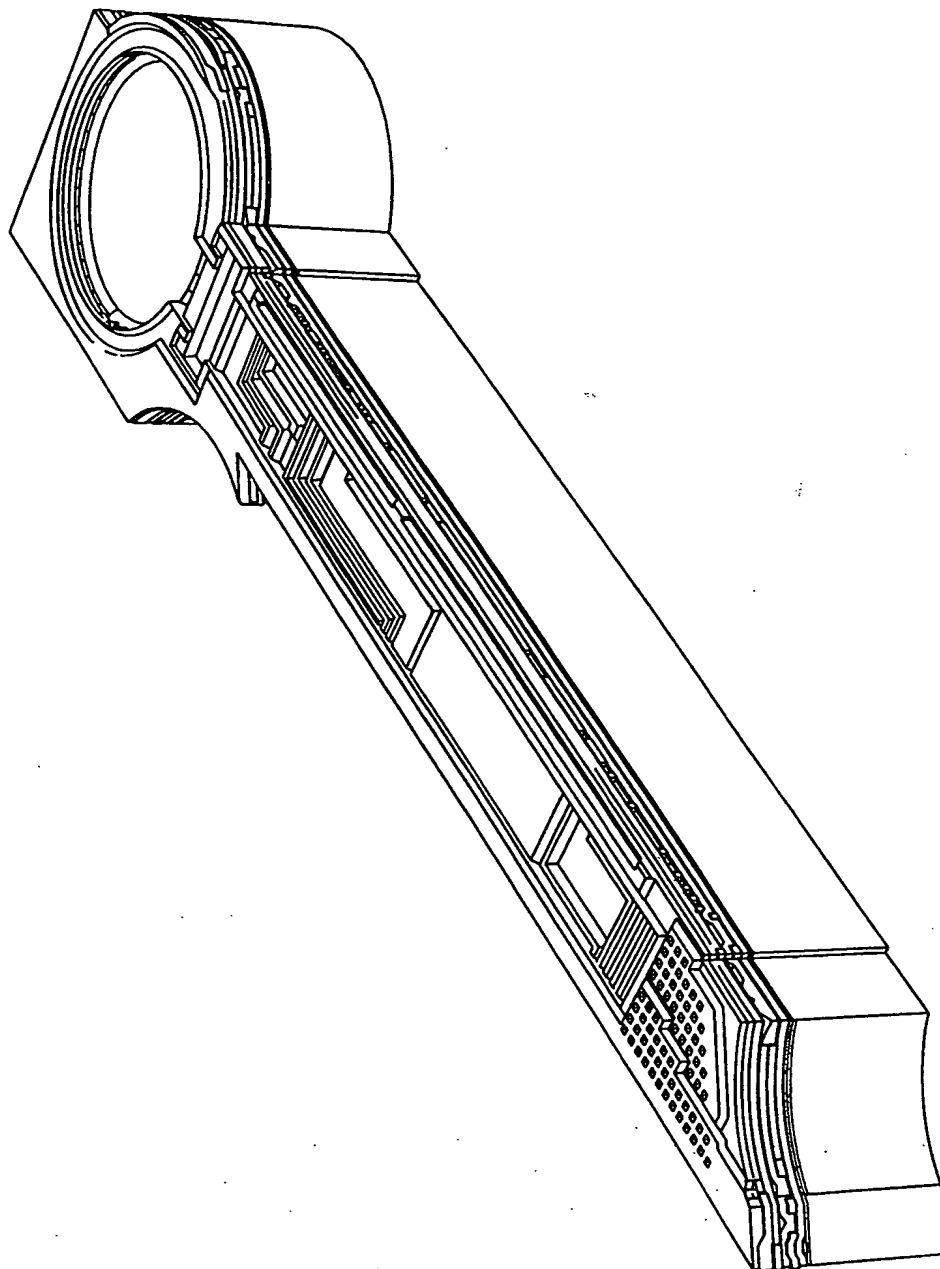
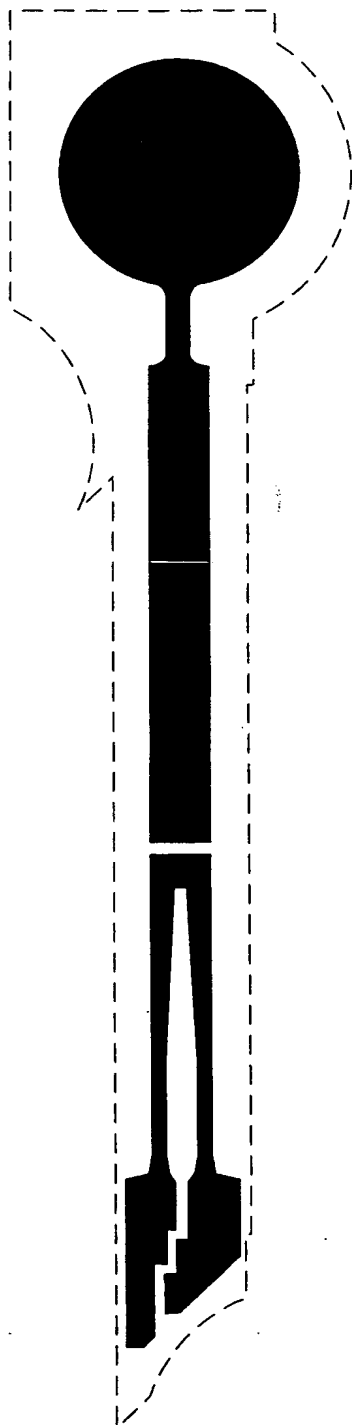


FIG. 52

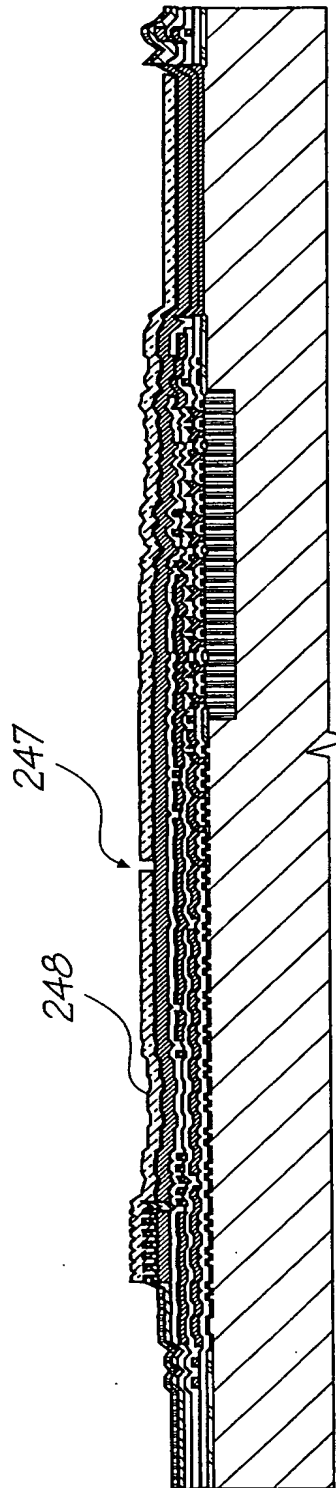
FIG. 52





Heater mask

FIG. 53



Deposit heater TiN

FIG. 54

APPROVED	O.G. FIG.
BY	CLASS SUBCLAS
CRAFTSMAN	

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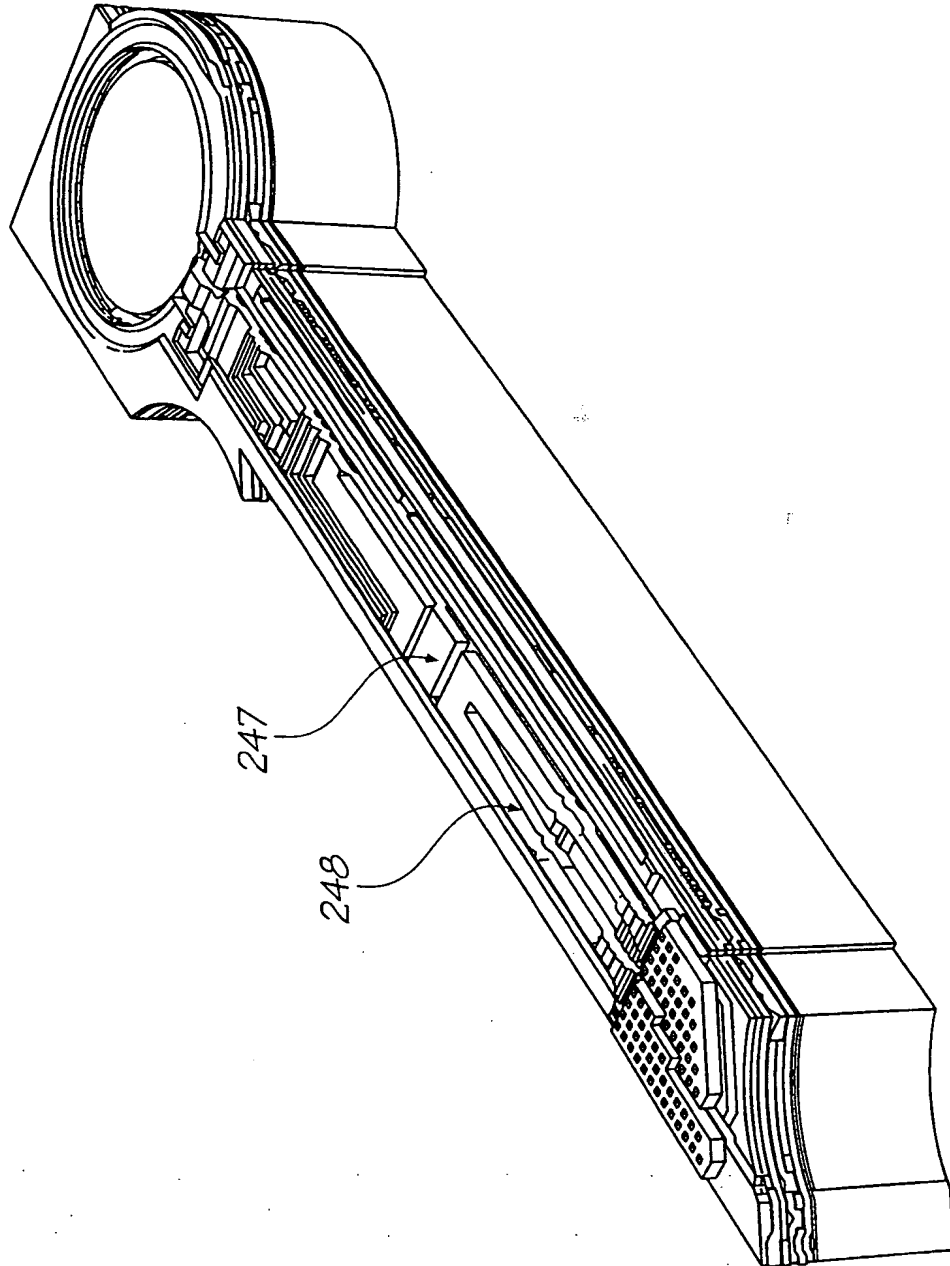
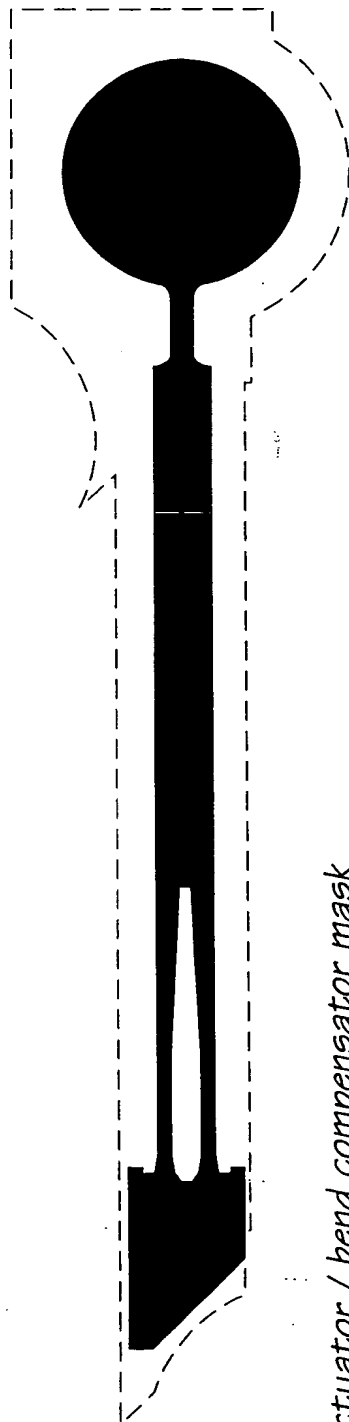


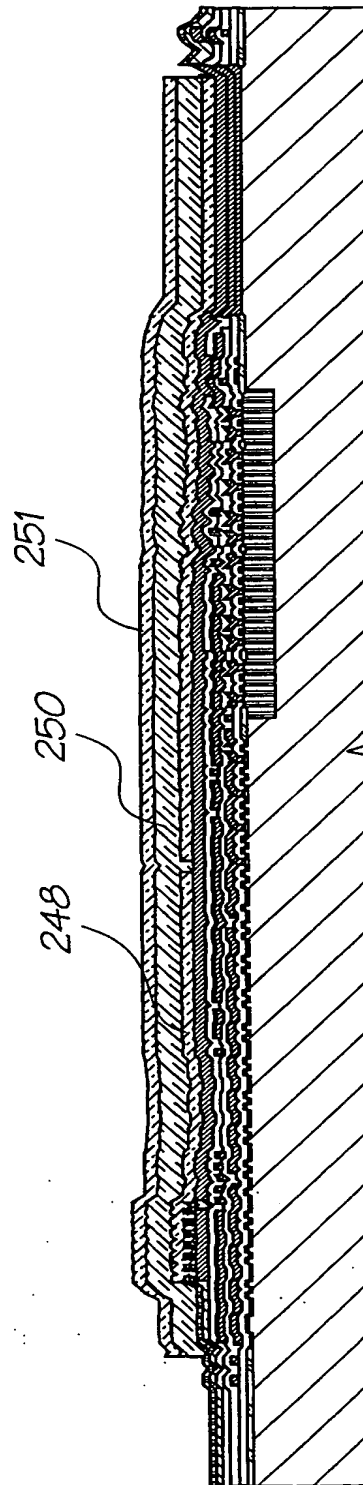
FIG. 55

FIG. 55



Actuator / bend compensator mask

FIG. 56



Deposit actuator glass and bend compensator TiN, etch together

FIG. 57

APPROVED	O.G. FIG.
BY	CLASS/SUBCL
DRAFTSMAN	

WO 00/23279

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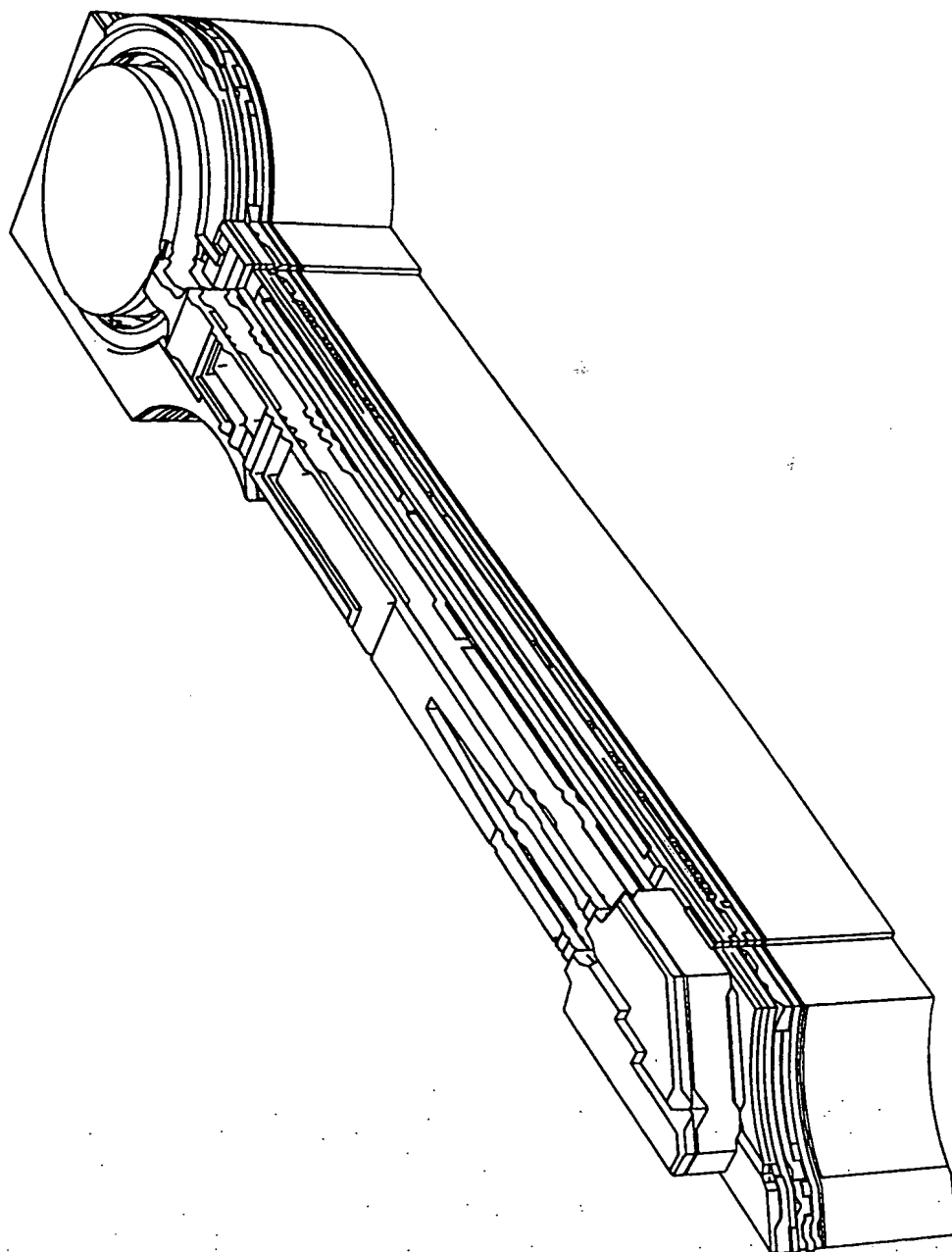


FIG. 58

FIG. 58

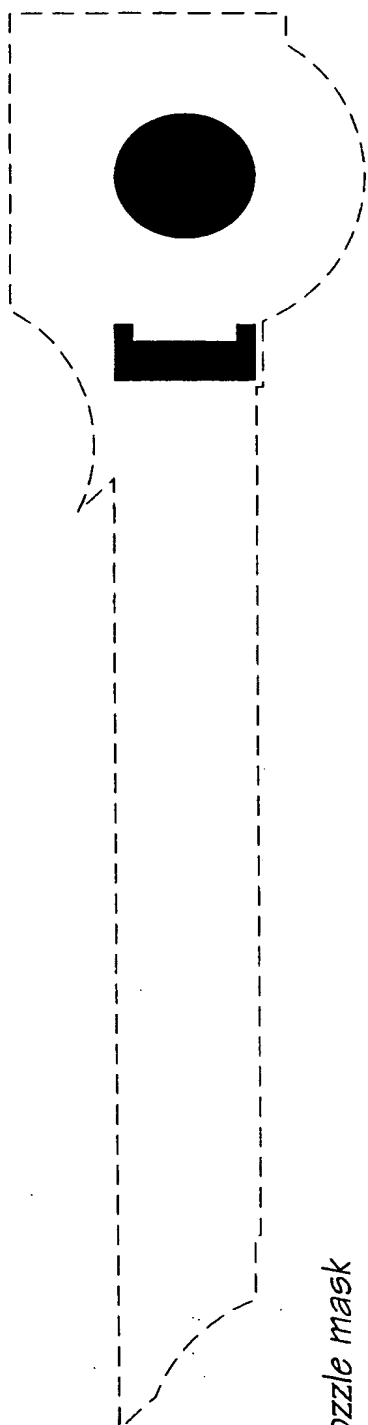
APPROVED	O.G. FIG.
BY	CLASS/SUBCLAS.
DRAFTSMAN	

WO 00/23279

PCT/AU99/00894

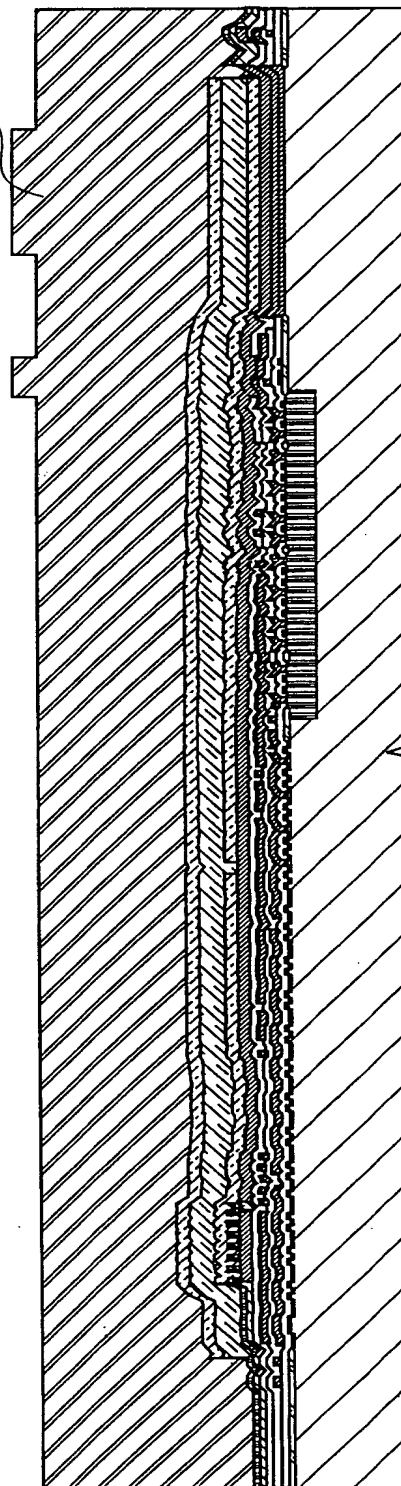
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FIG. 59



Nozzle mask

FIG. 59



Deposit sacrificial layer, etch nozzles

FIG. 60

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

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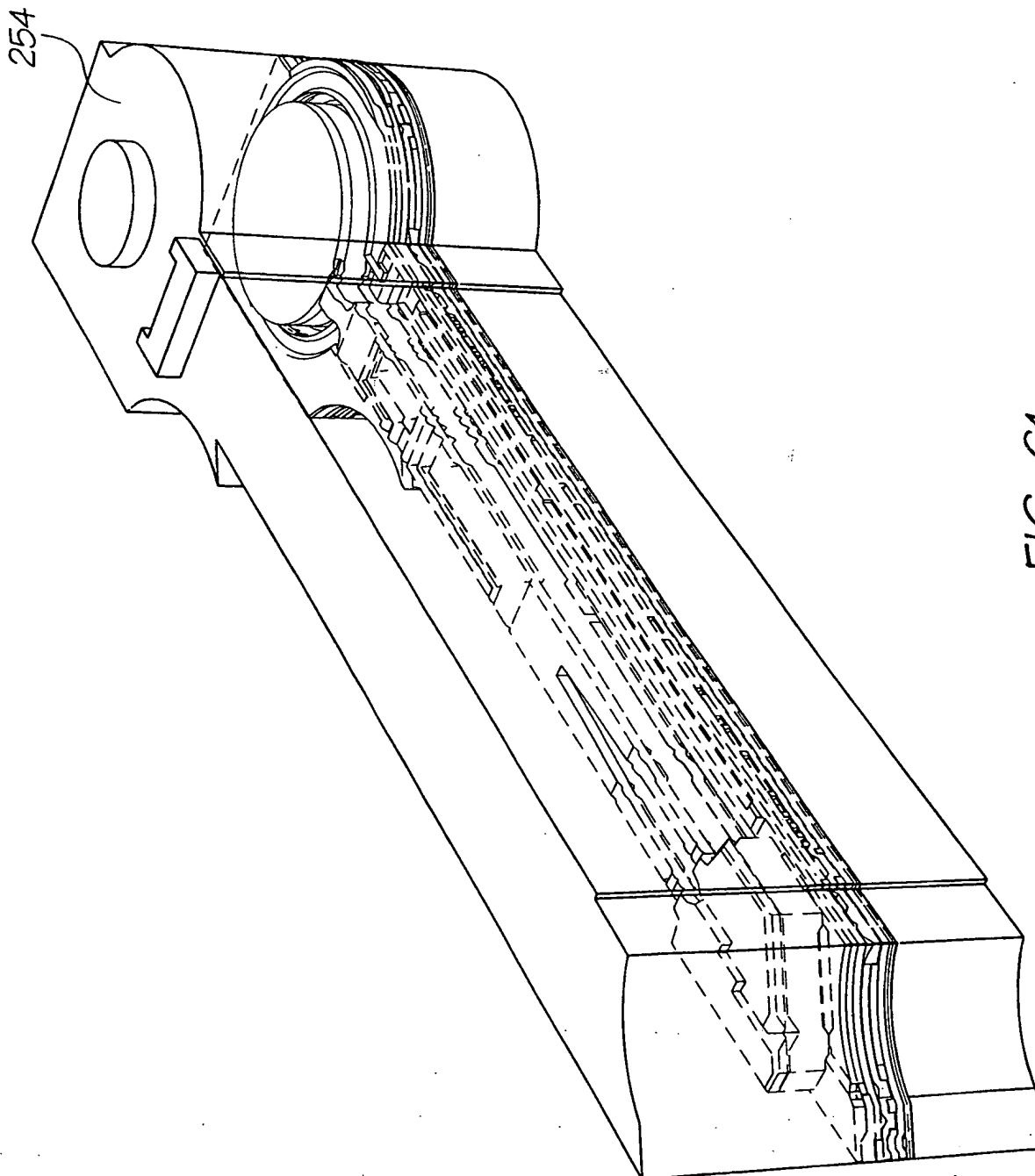


FIG. 61

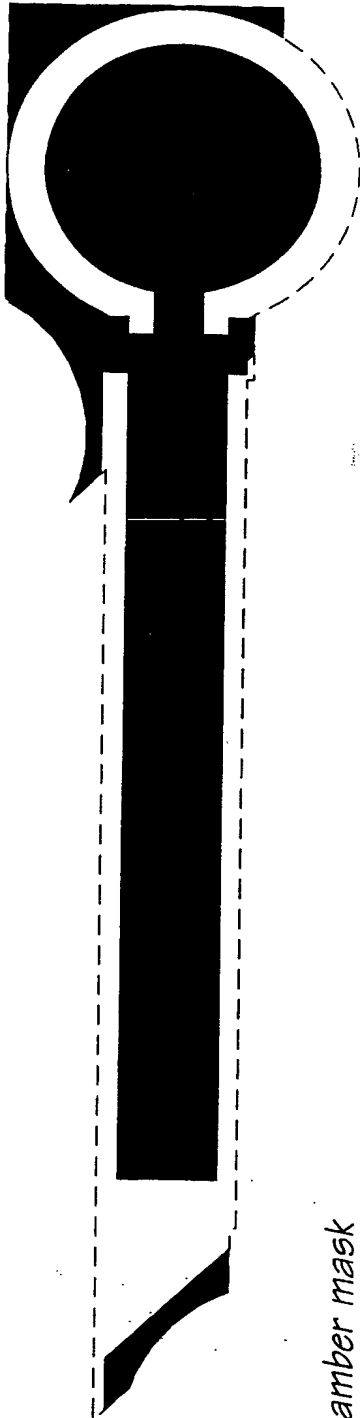
T01E80" 26220860

FIG. 62

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

PCT/AU99/00894

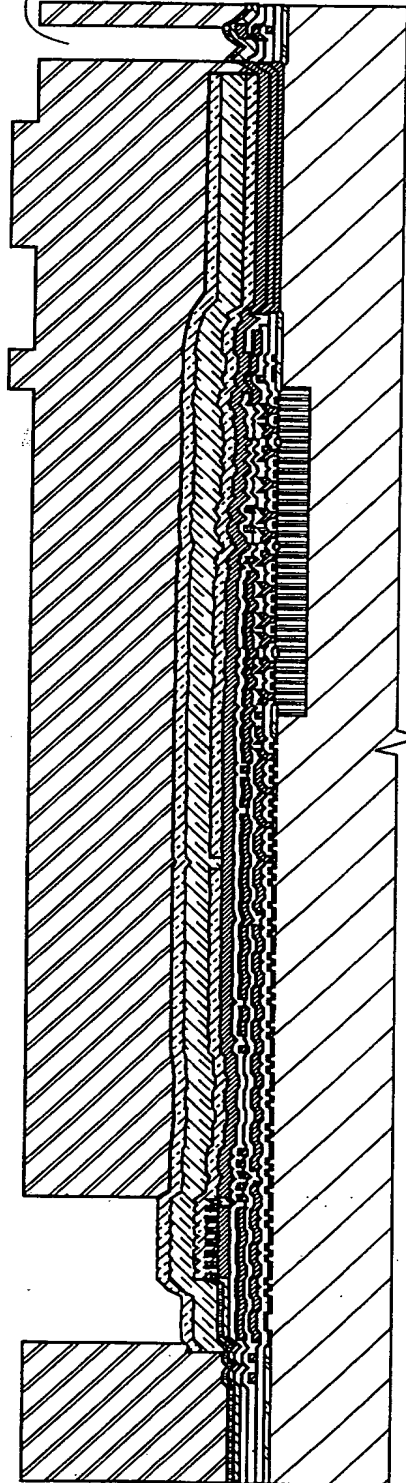


Chamber mask

FIG. 62

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255



Etch chambers in sacrificial layer

FIG. 63

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

PCT/AU99/00894

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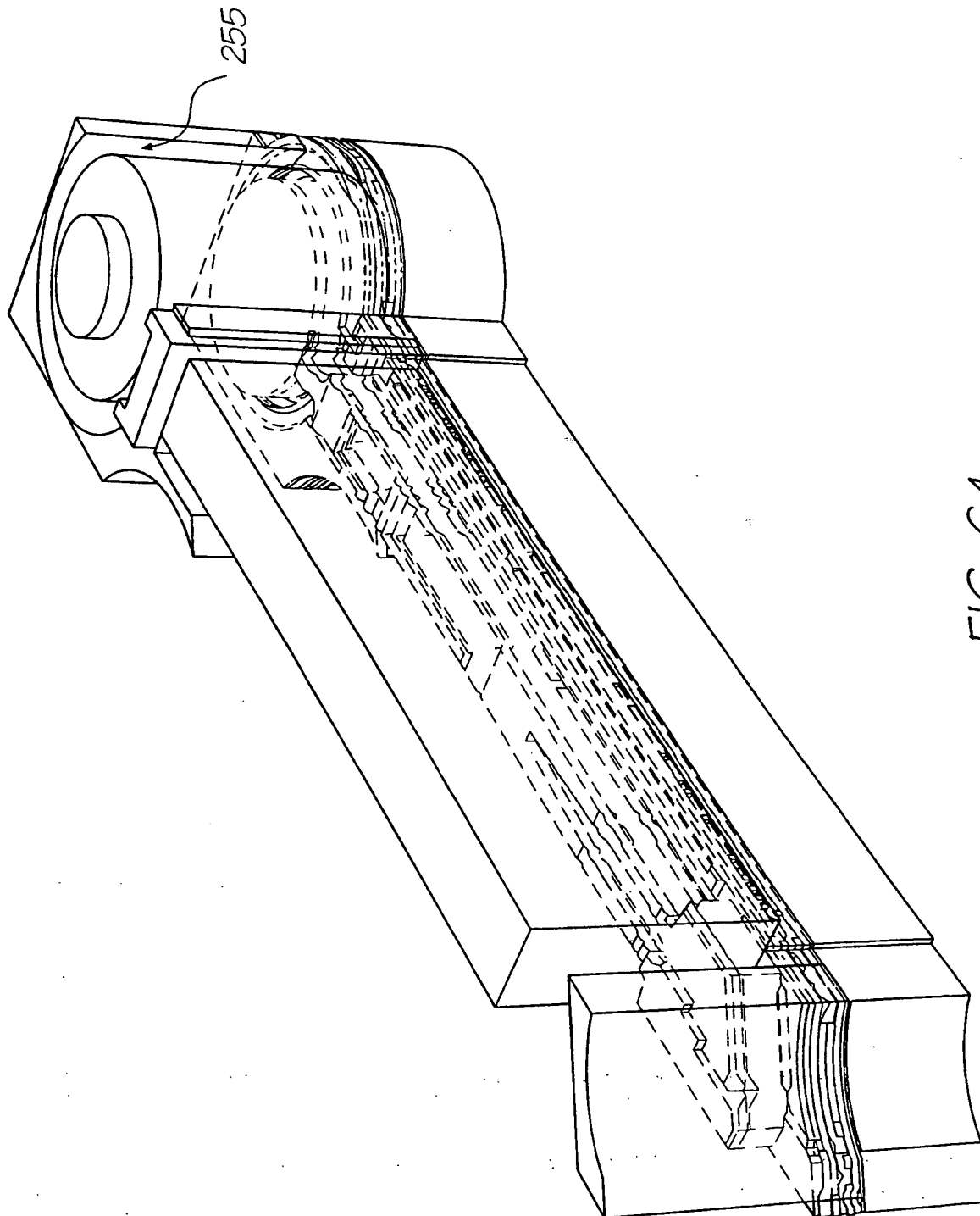


FIG. 64

FIG. 64



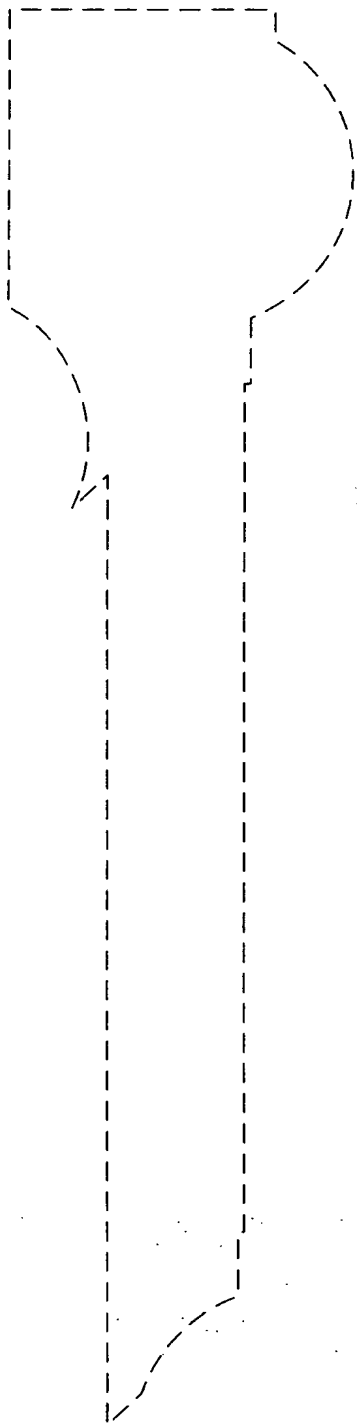
TOTERO 26220860

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

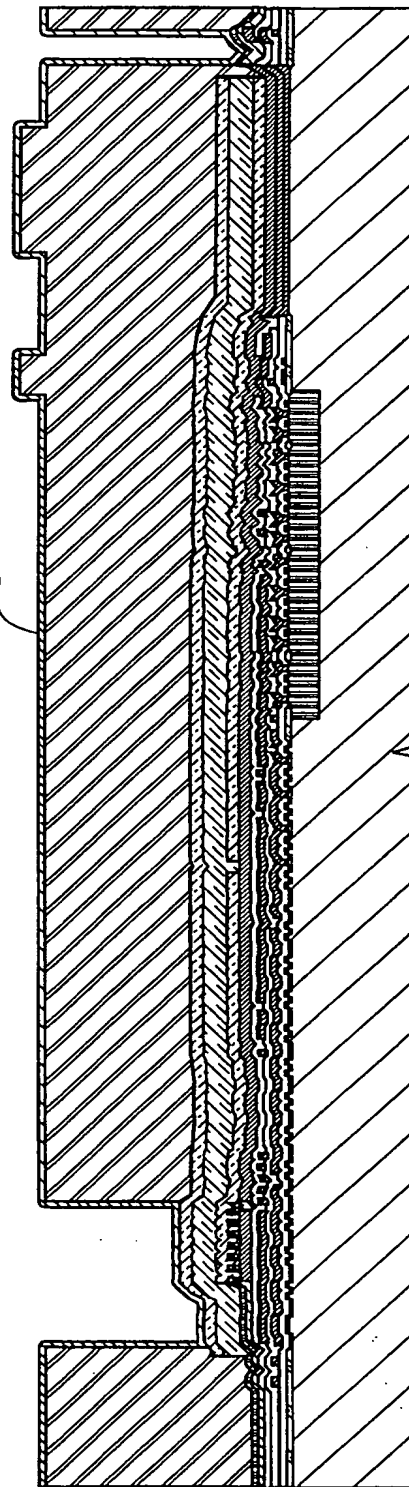
PCT/AU99/00894

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No mask

257



Deposit chamber walls

FIG. 65

APPROVED	O.G. FIG.
BY	CLASS/SUBCLAS
DRAFTSMAN	

FIG. 66

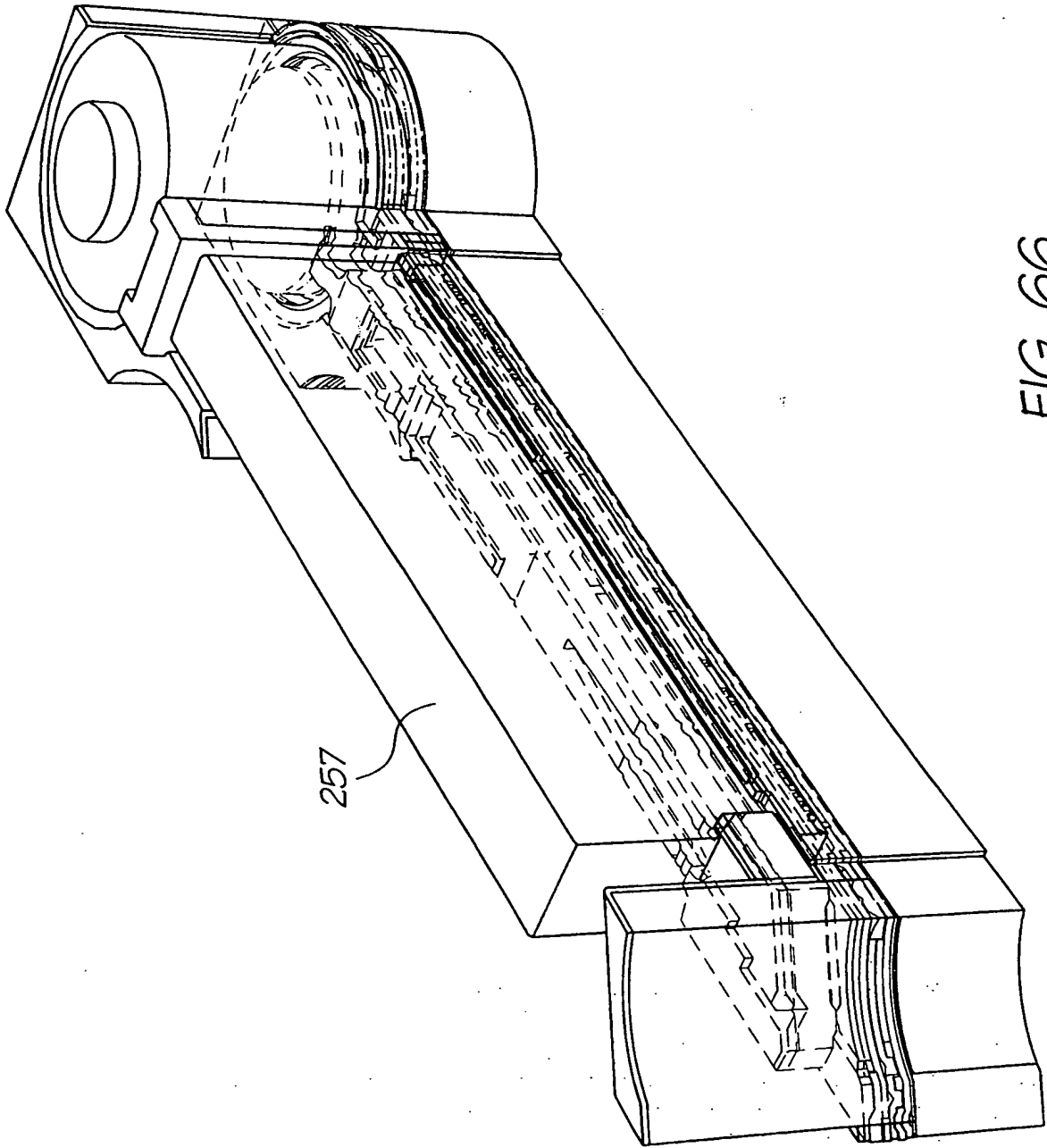
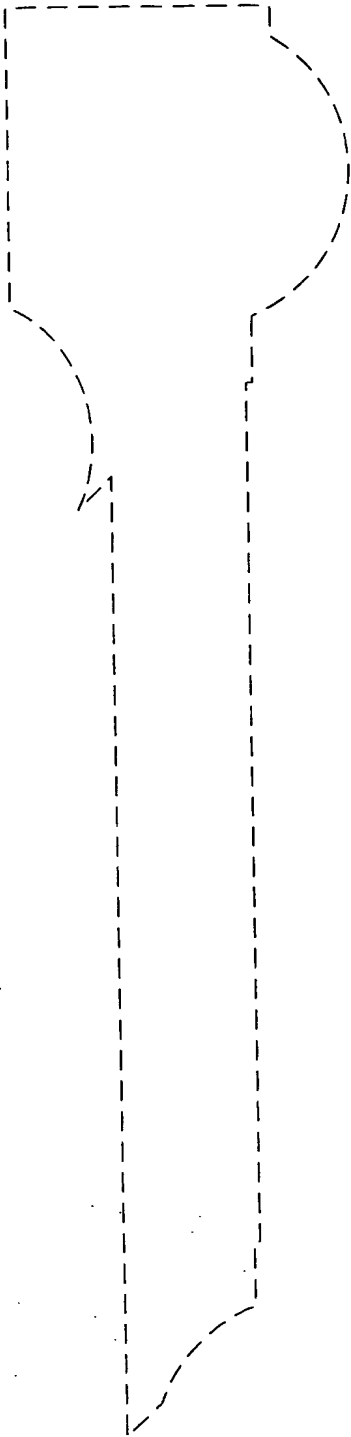


FIG. 66

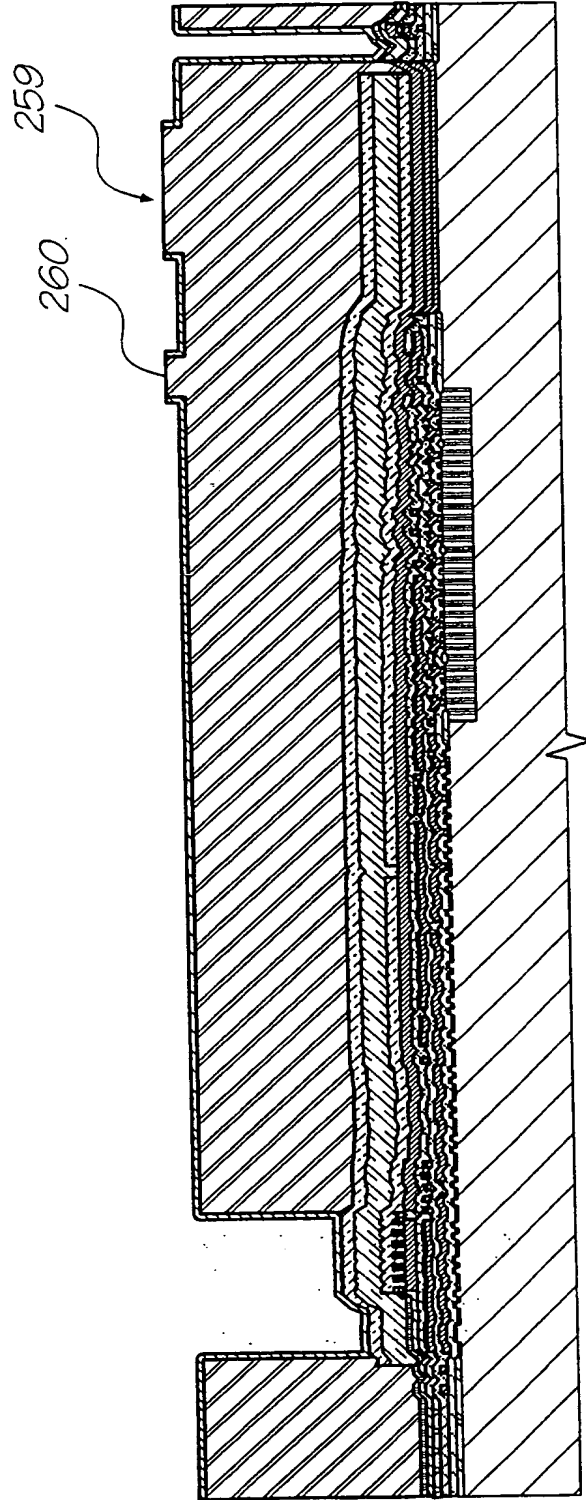
APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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FIG. 67



No mask



Form self-aligned nozzles using CMP

FIG. 67

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
CRAFTSMAN	

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FIG. 68

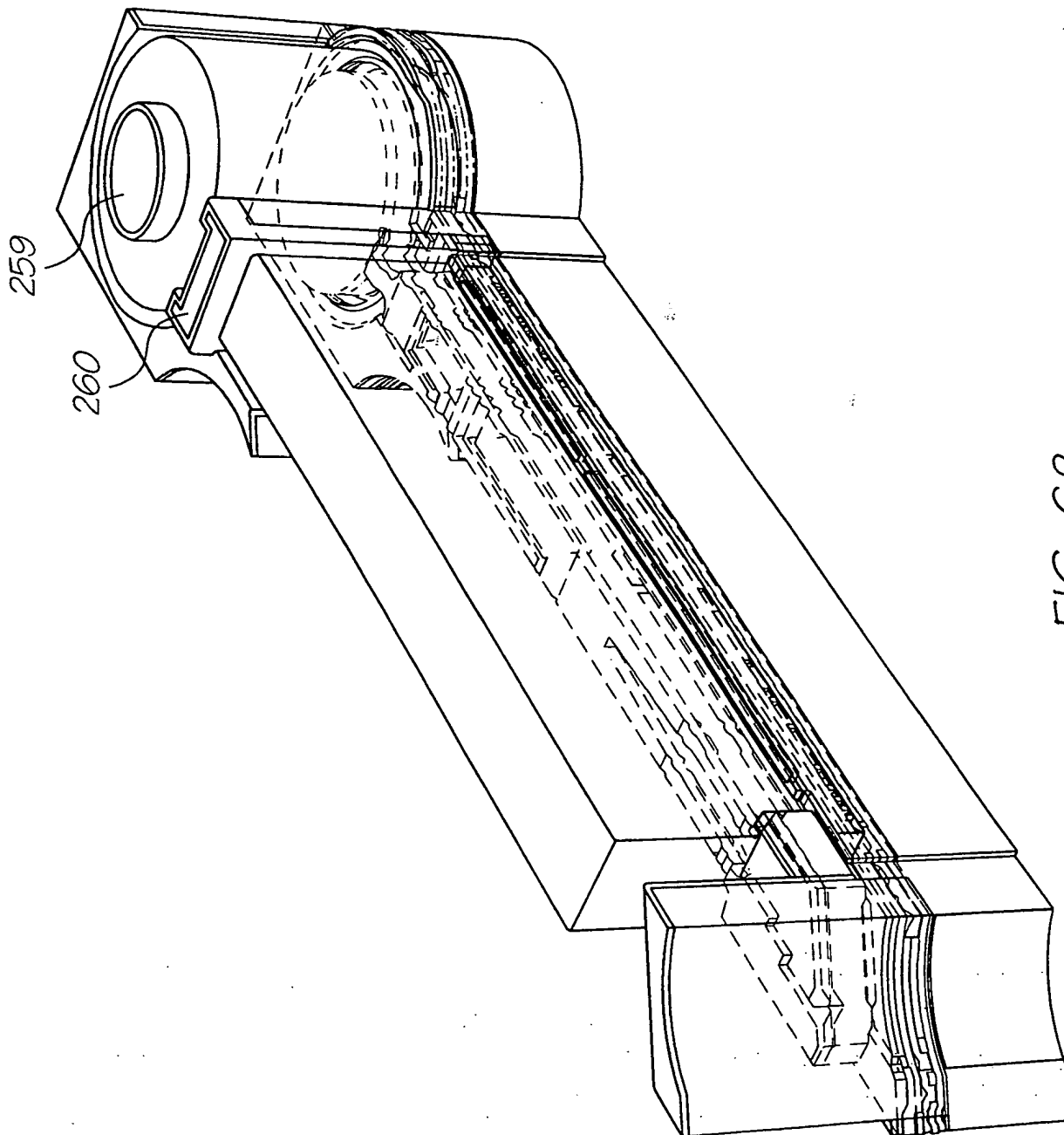


FIG. 68

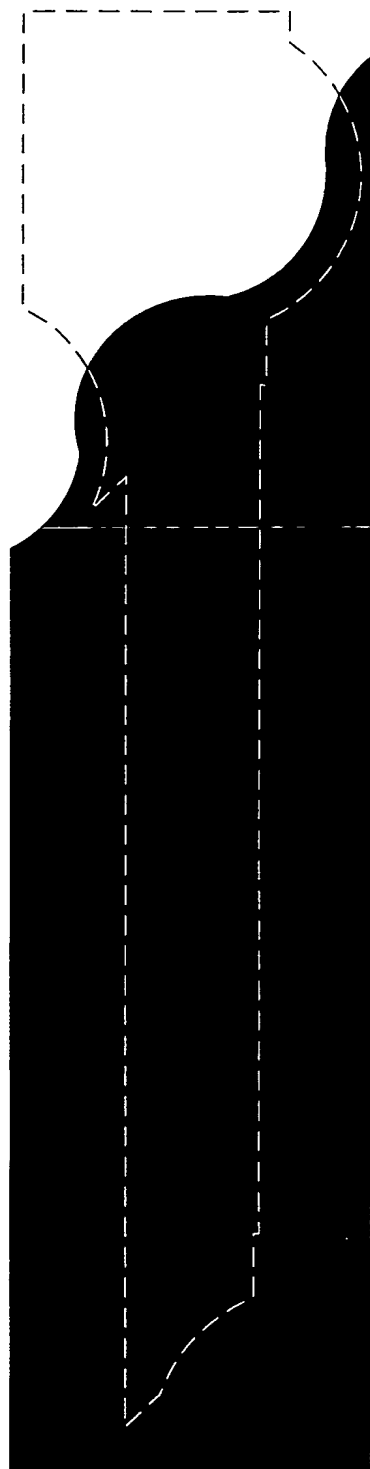
APPROVED	O.G. FIG.	CLASS	SUBCLASS
BY	DRAFTSMAN		

FIG. 69

WO 00/23279

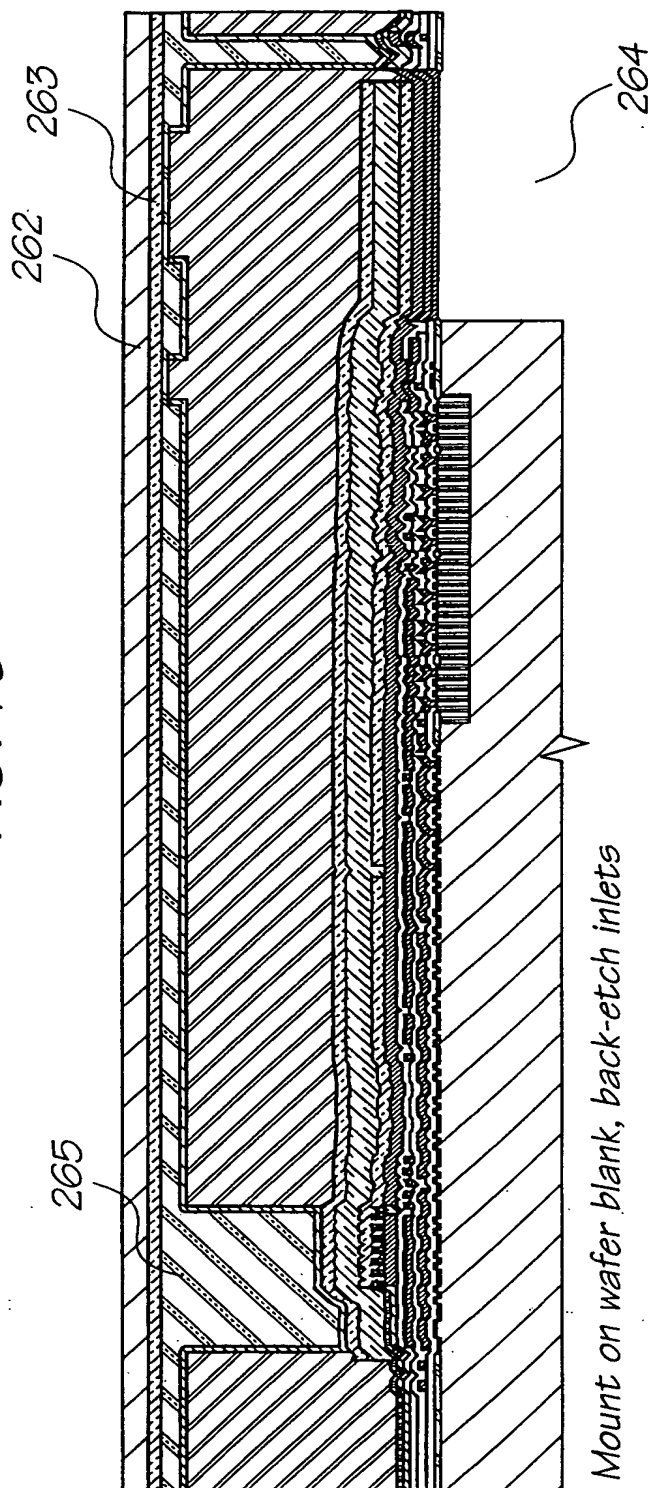
PCT/AU99/00894

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Back-etch inlet mask

FIG. 70



Mount on wafer blank, back-etch inlets

FIG. 69

FIG. 70

APPROVED	DATE	FIG.
BY	CLASS	SUBCLASS
DRAFTSMAN		

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PCT/AU99/00894

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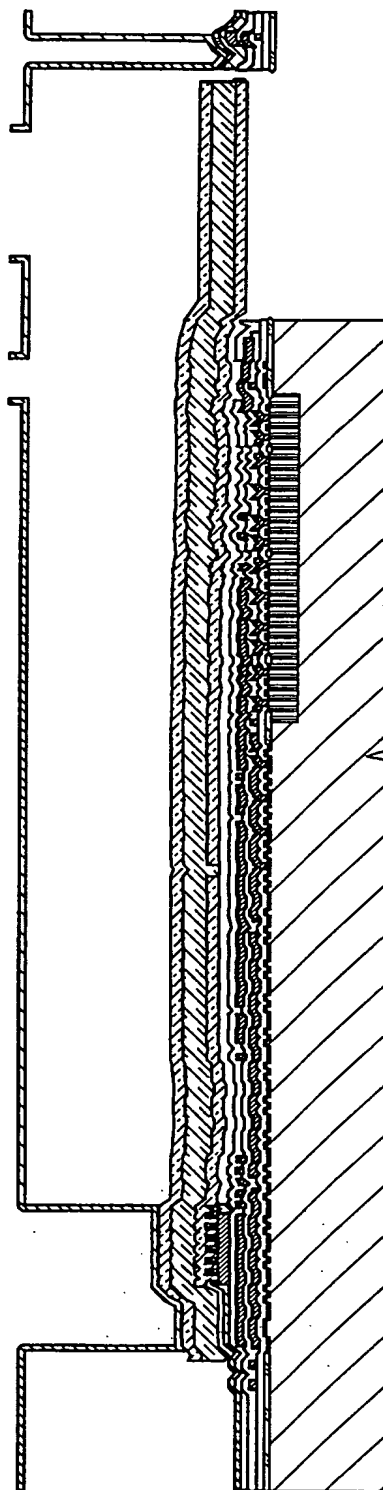
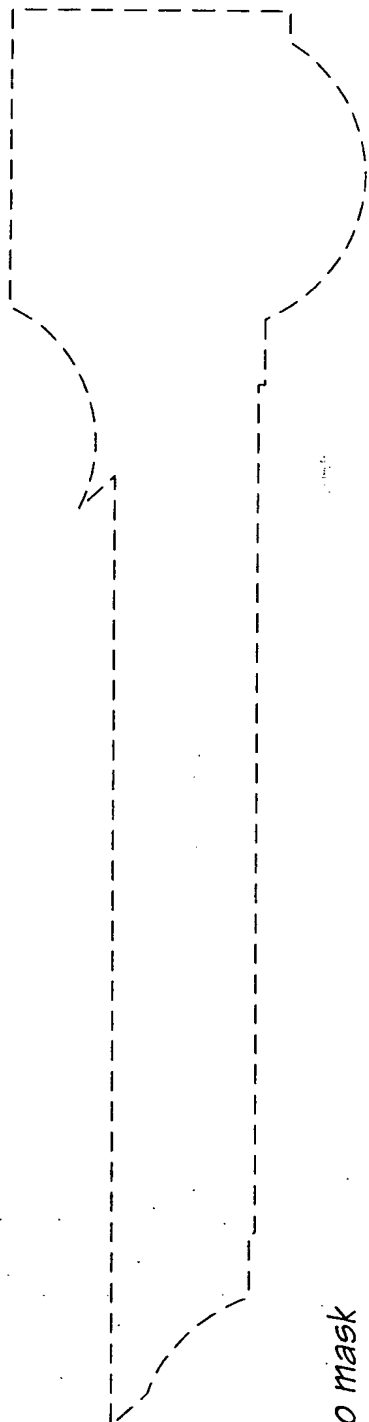


FIG. 71

APPROVED	O.G. FIG.
BY	CLASS 365CLASS
DRAFTSMAN	

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PCT/AU99/00894

FIG. 72

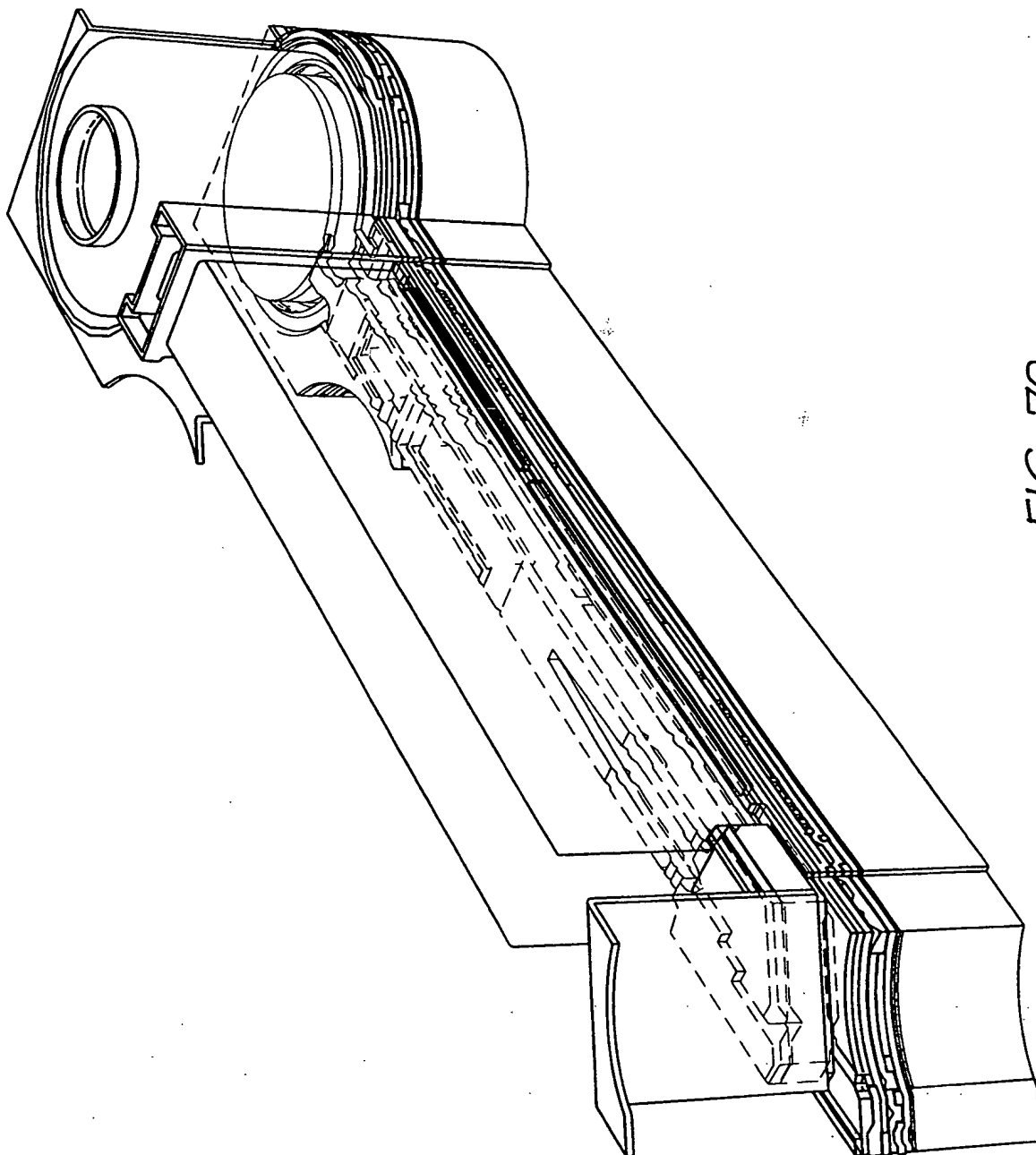


FIG. 72

APPROVED	C.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

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FIG. 73

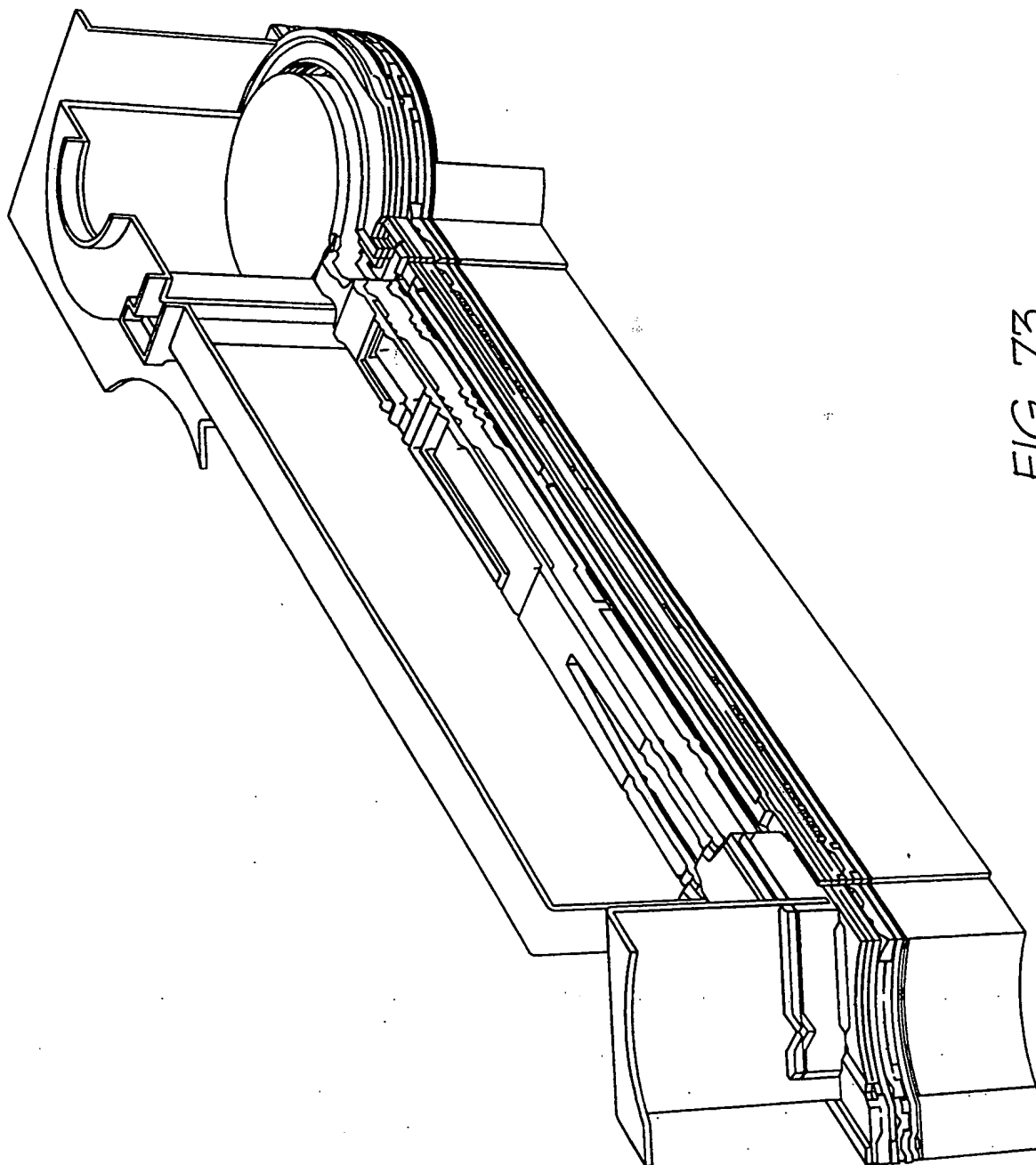


FIG. 73



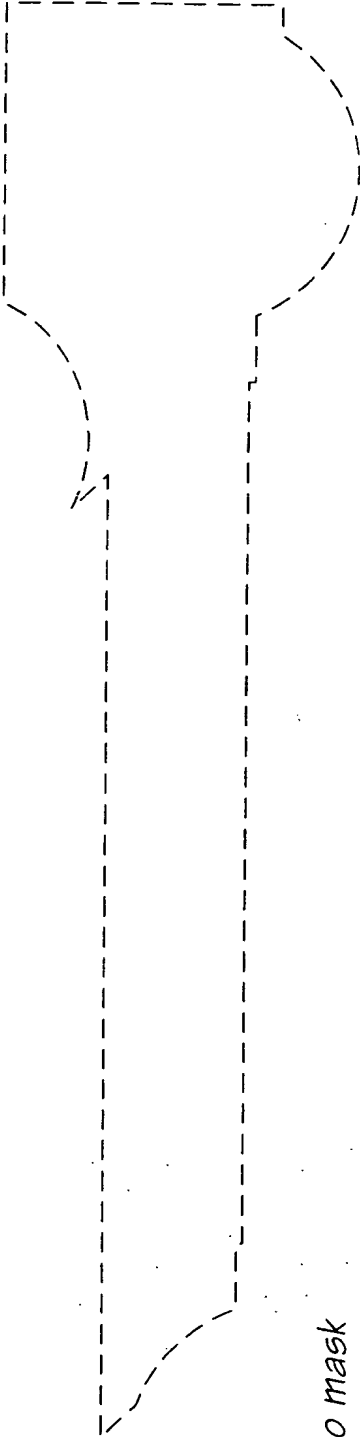
APPROVED	O.G. FIG.
BY	CLASS
DRAFTSMAN	SUBCLASS

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PCT/AU99/00894

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TOTERO" 46220260



No mask

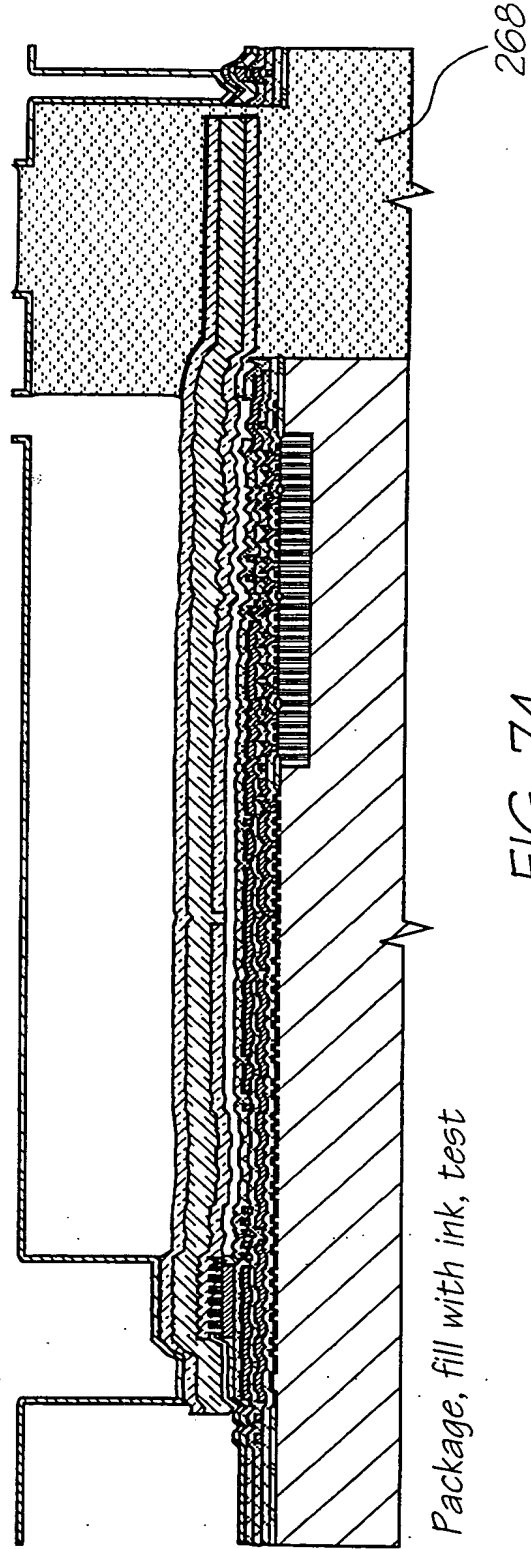


FIG. 74

Package, fill with ink, test

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

FIG. 75

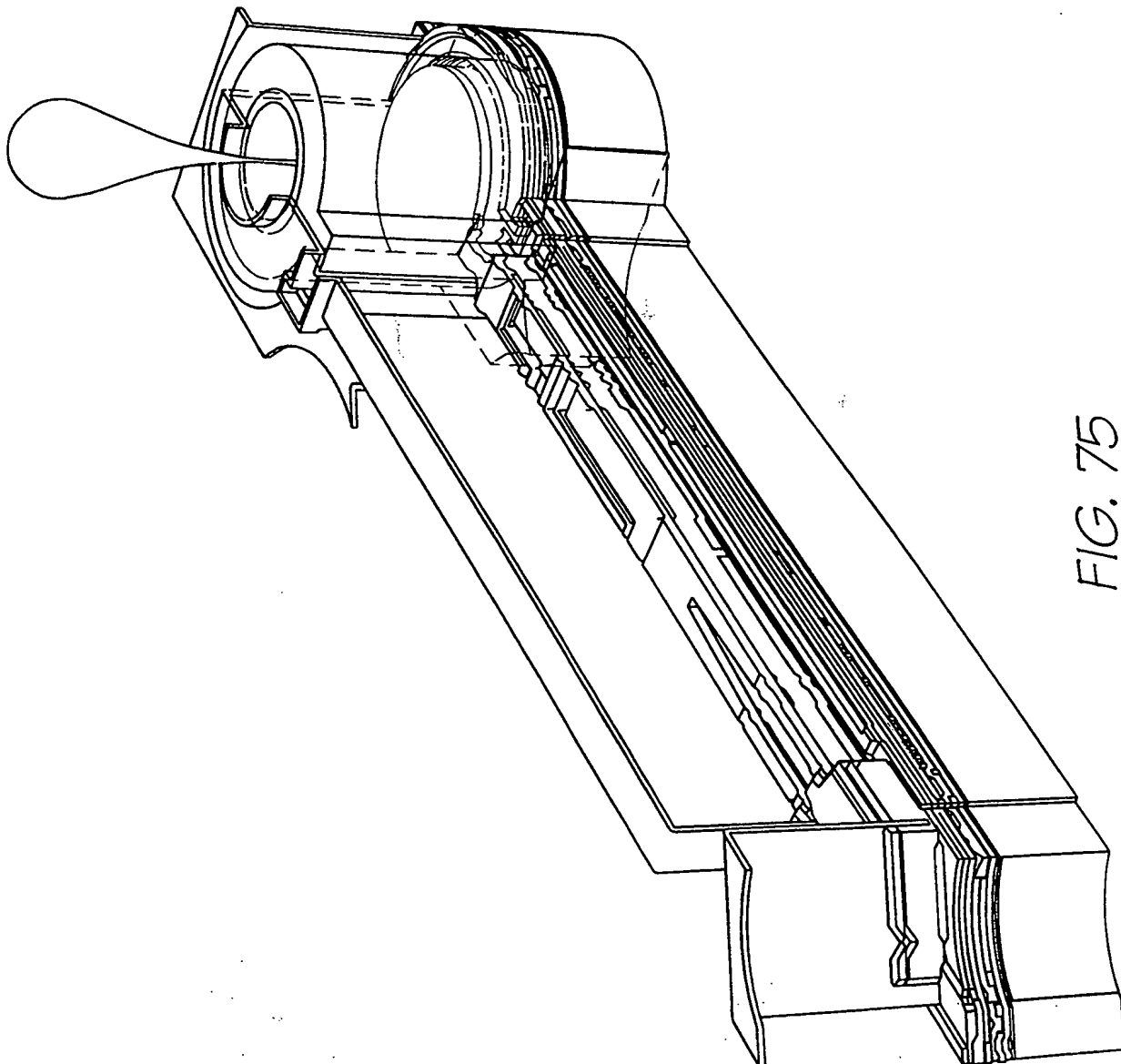


FIG. 75

APPROVED: C.G. FIG.	
BY	CLASS/SUBCLASS
DRAFTSMAN	

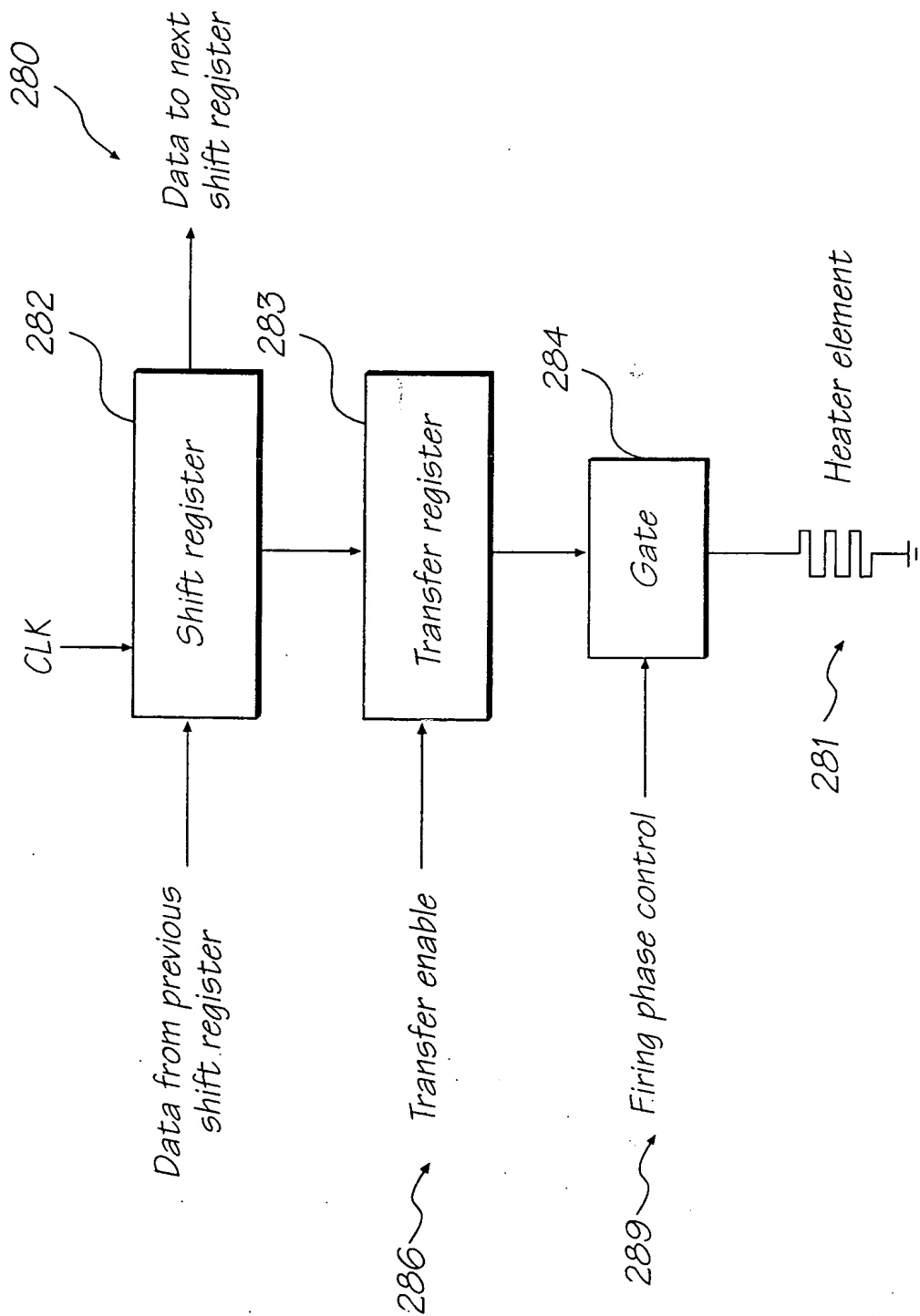


FIG. 76

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

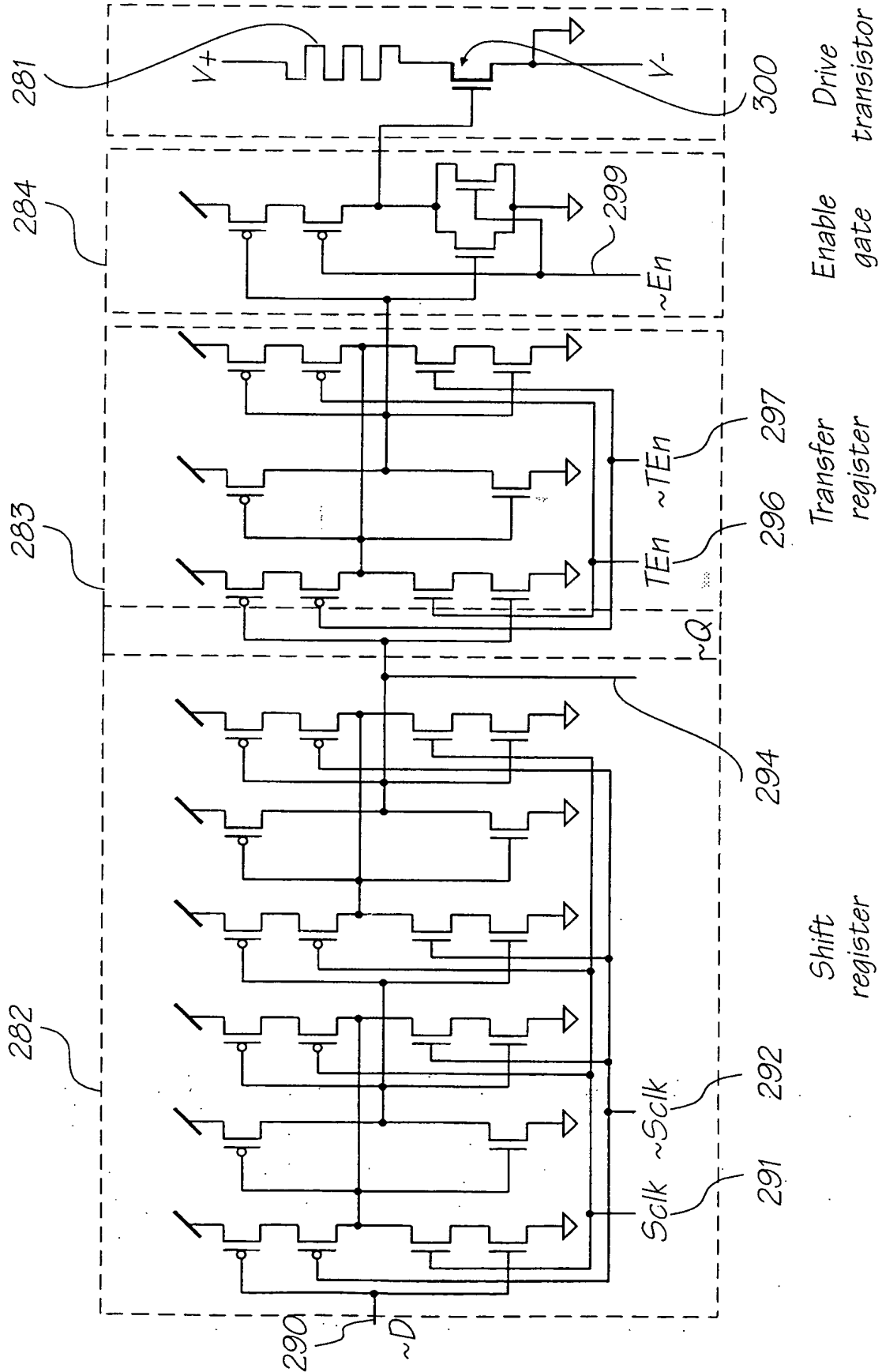


FIG. 77

APPROVED: C.G. FIG.	
BY	CLASS
DRAFTSMAN	

Key



























	Silicon		Poly		Via 2		Actuator TiN		Cyan Ink
			Contacts		Metal 3		Actuator Glass		Magenta Ink
	Active		Metal 1		Via 3		Compensator TiN		Yellow Ink
	p+		Via 1				Sacrificial		
	n+		Metal 2				Sacrificial-nozzle		
									Floor
									Wall
									Roof
									Rim
									Shroud

FIG. 78

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
CRAFTSMAN	

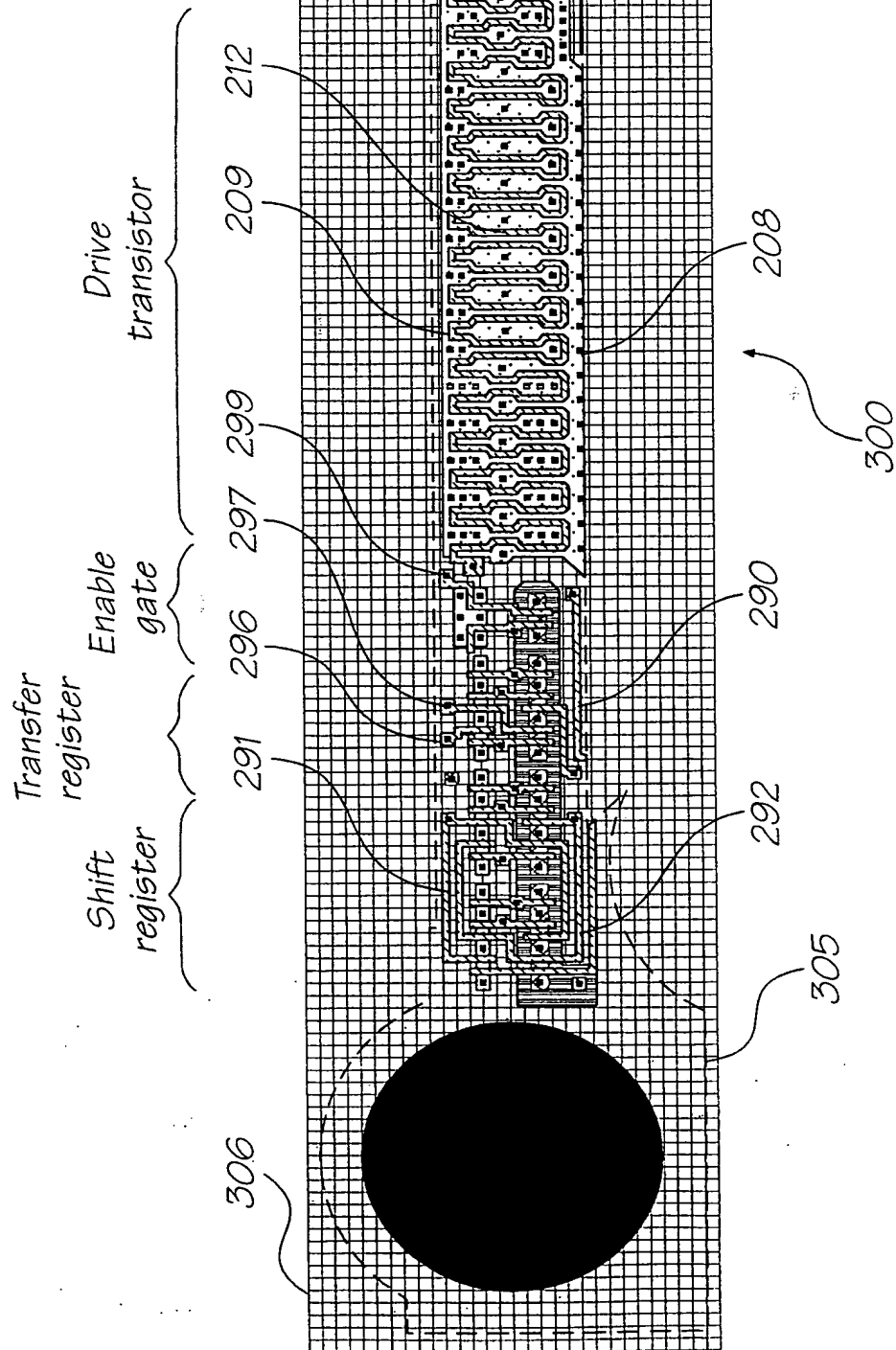


FIG. 79

T0FE80" 46240860

APPROVED	O.G. FIG.
BY	CLASS. CLASS.
DRAFTSMAN	

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296 297

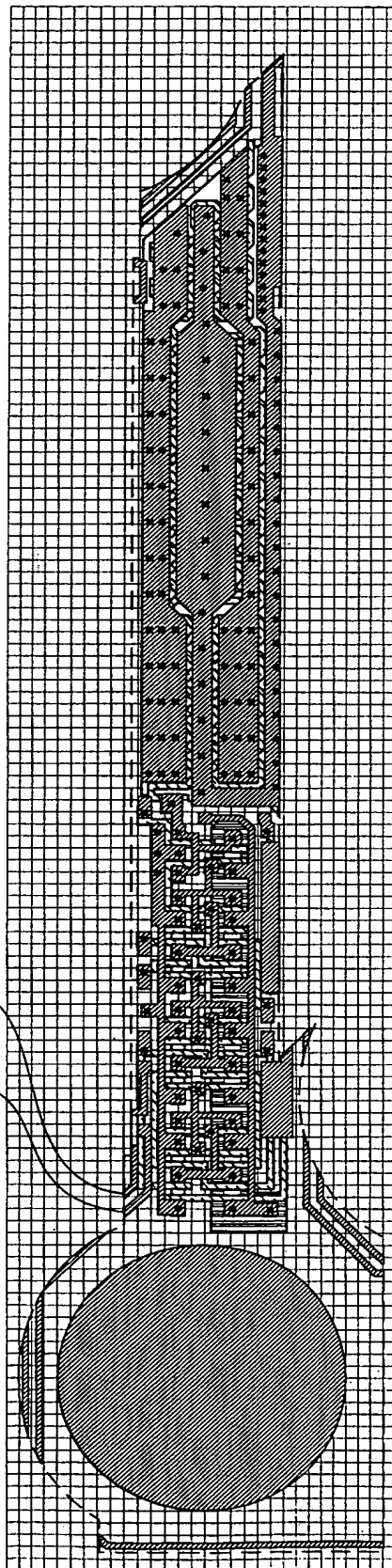


FIG. 80

FIG. 80 262/0860

APPROVED	C.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

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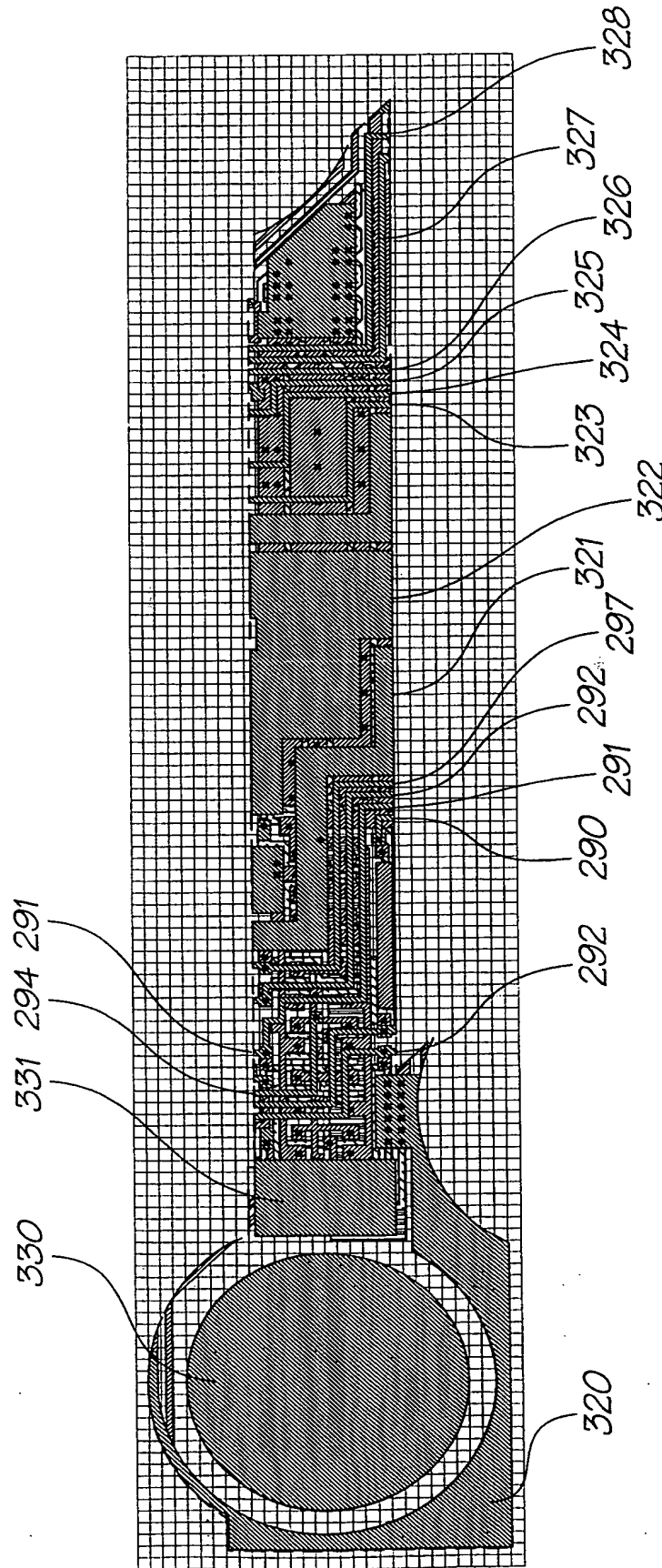


FIG. 81



TOTERO" 6220860

APPROVED	C.G.F.
BY	CLASS
DRAFTSMAN	DECLASS

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PCT/AU99/00894

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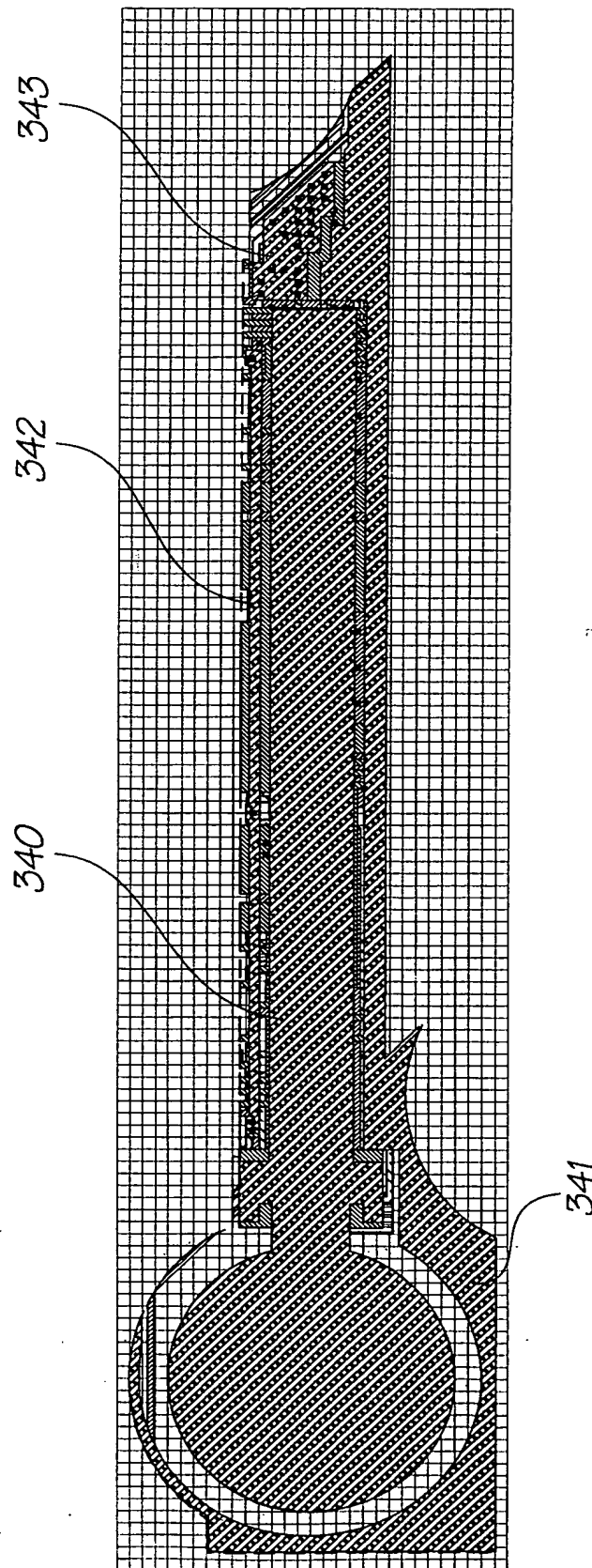


FIG. 82

FIG. 83

APPROVED	C. J. F. G.
BY	CLASS, SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

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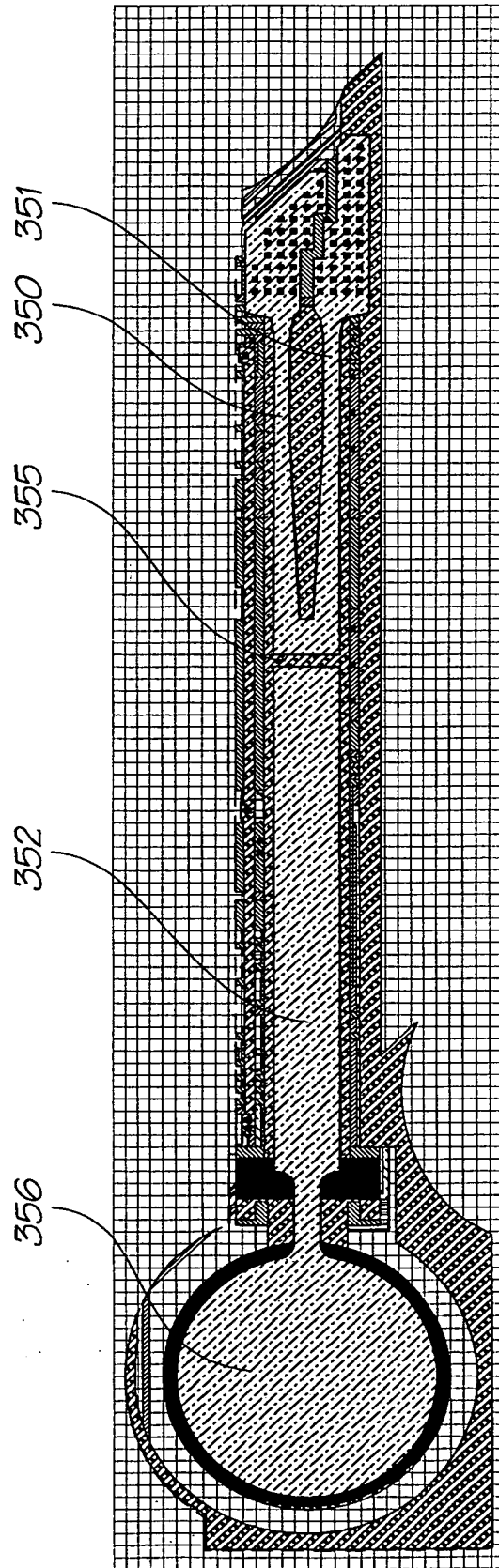


FIG. 83

FIG. 80" 46240860

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

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PCT/AU99/00894

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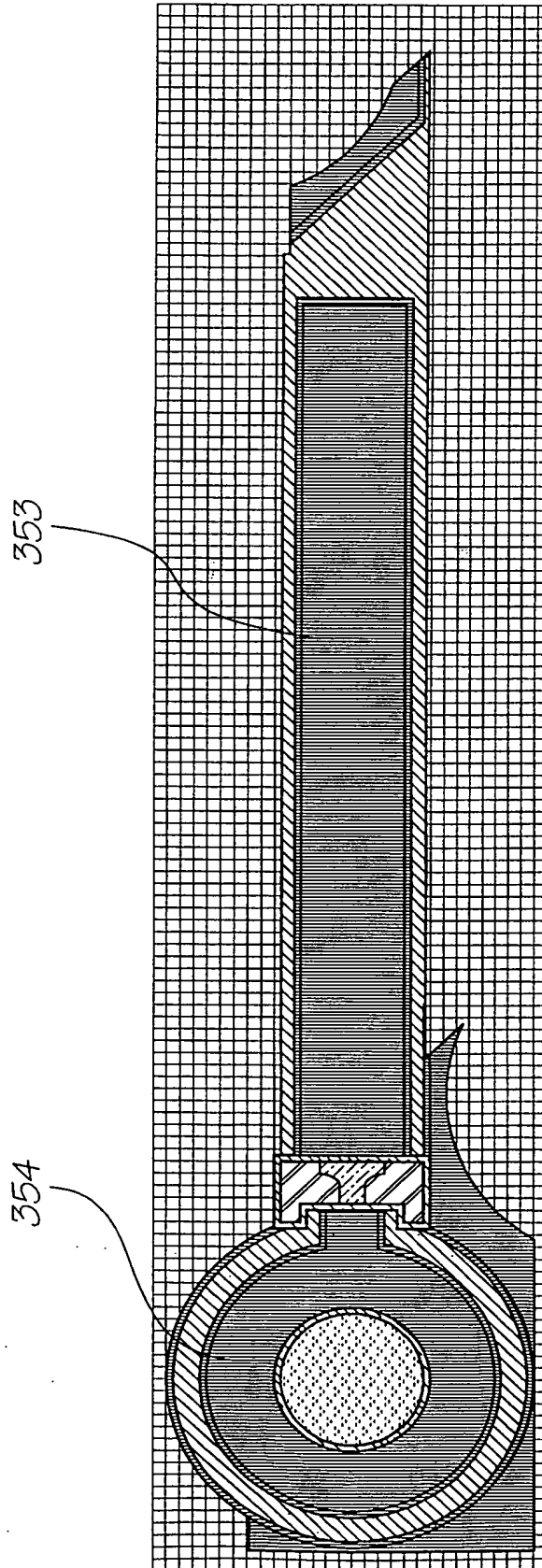


FIG. 84

APPROVED	FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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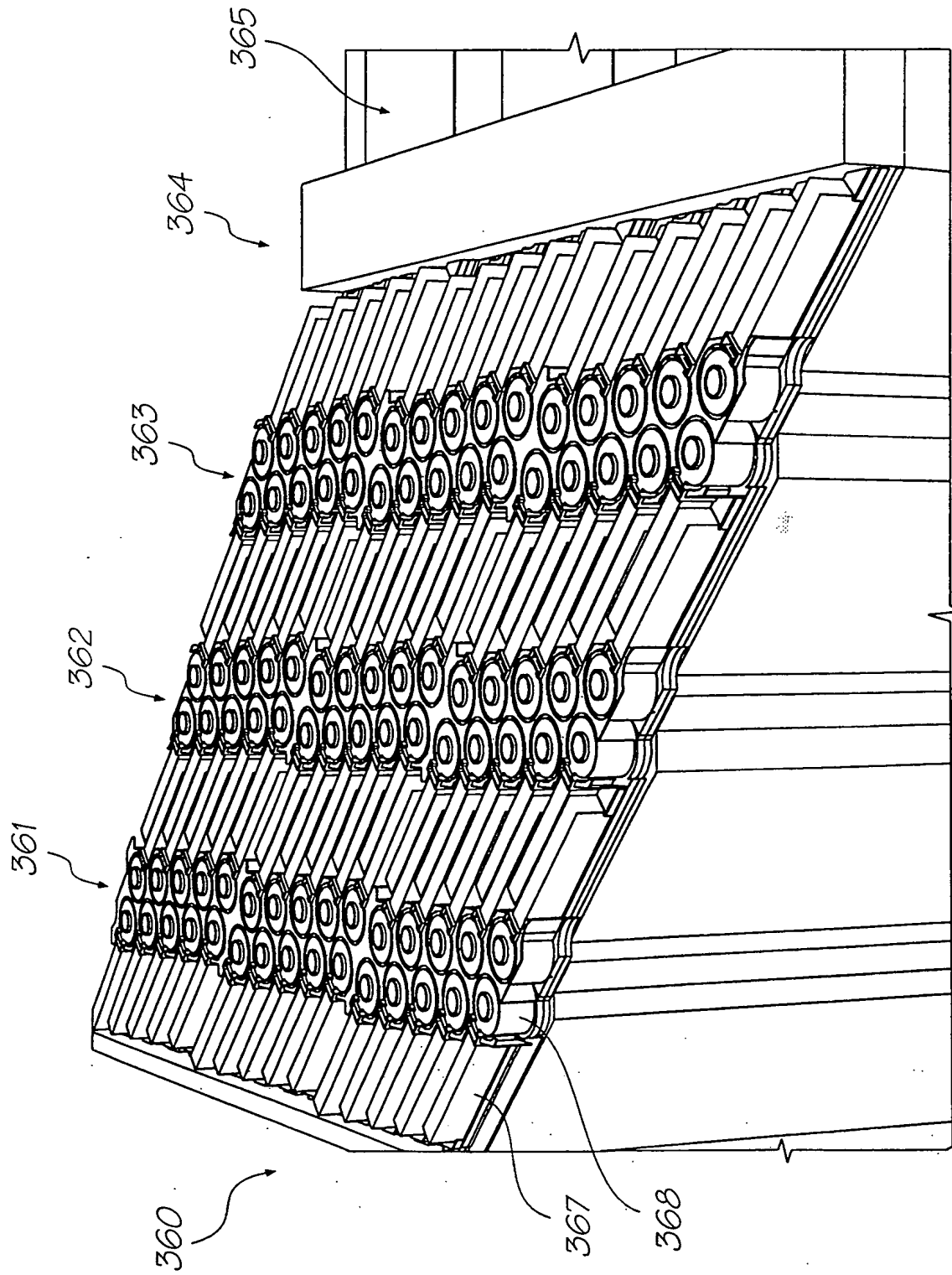


FIG. 85

T07E80" 46220860

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

PCT/AU99/00894

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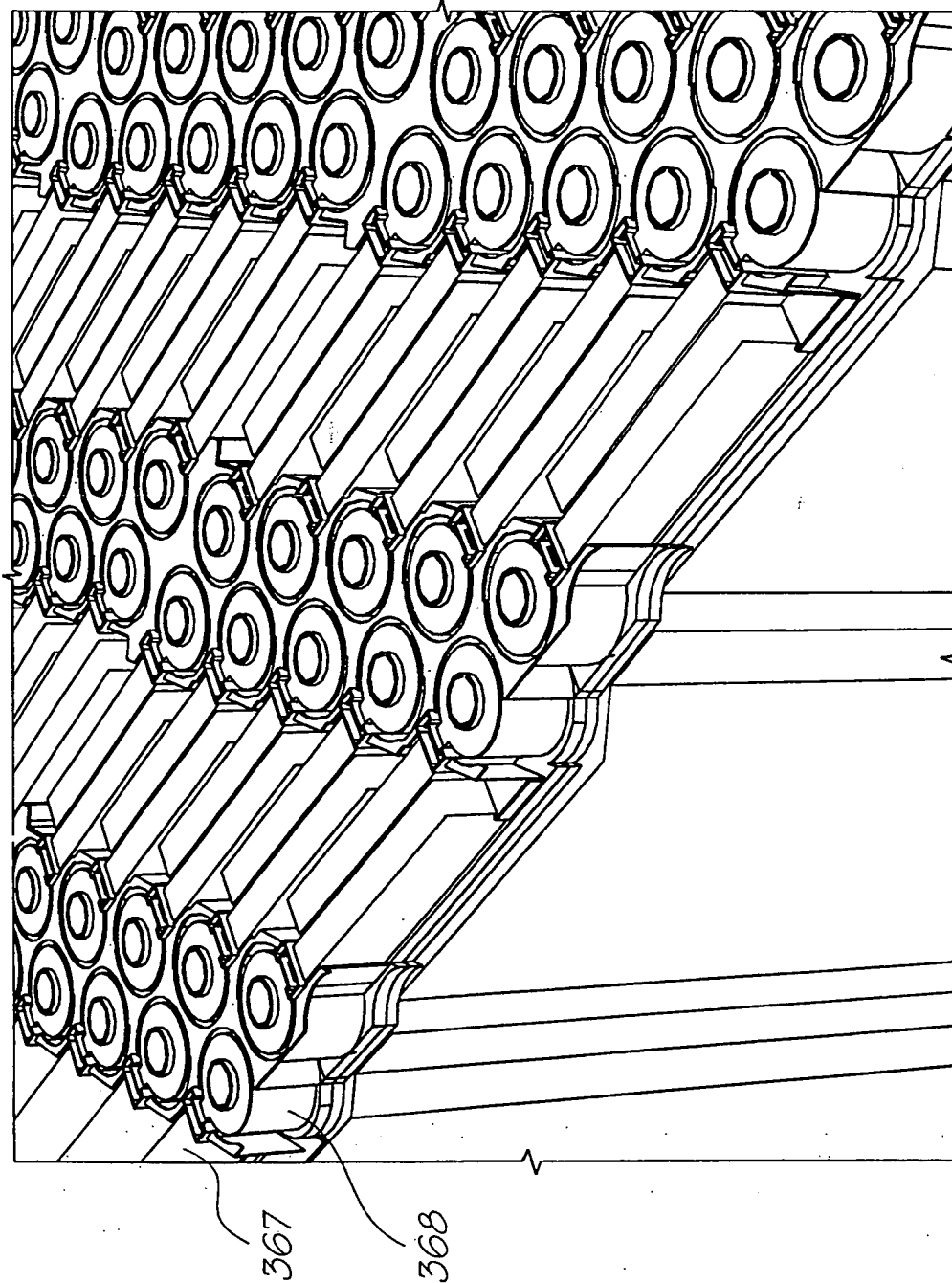


FIG. 86

TOTED 26240860

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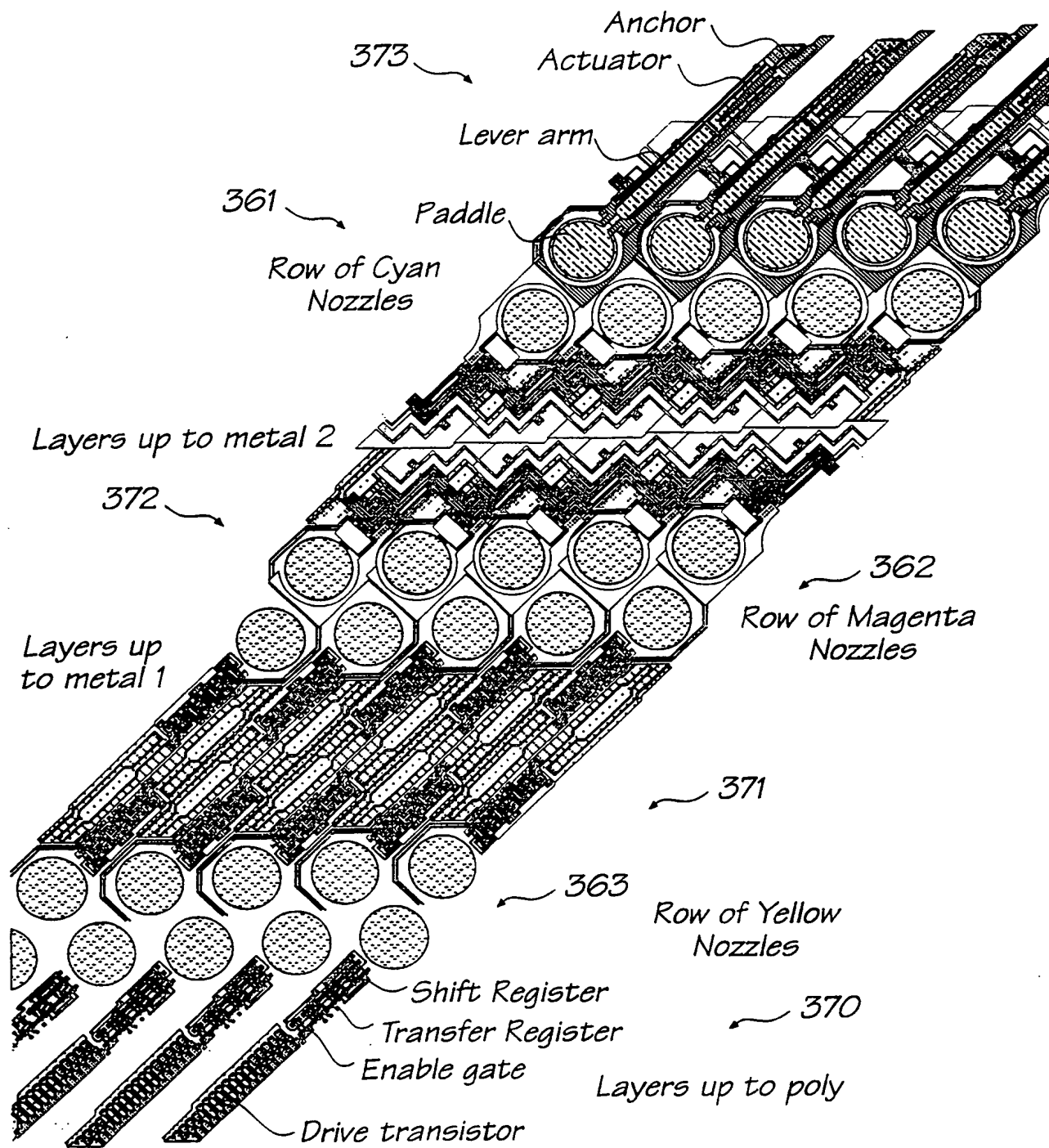


FIG. 87

APPROVED	O.G. FIG.
	CLASS/SUBCLASS
BY	
DRAFTSMAN	

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PCT/AU99/00894

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FIG. 88

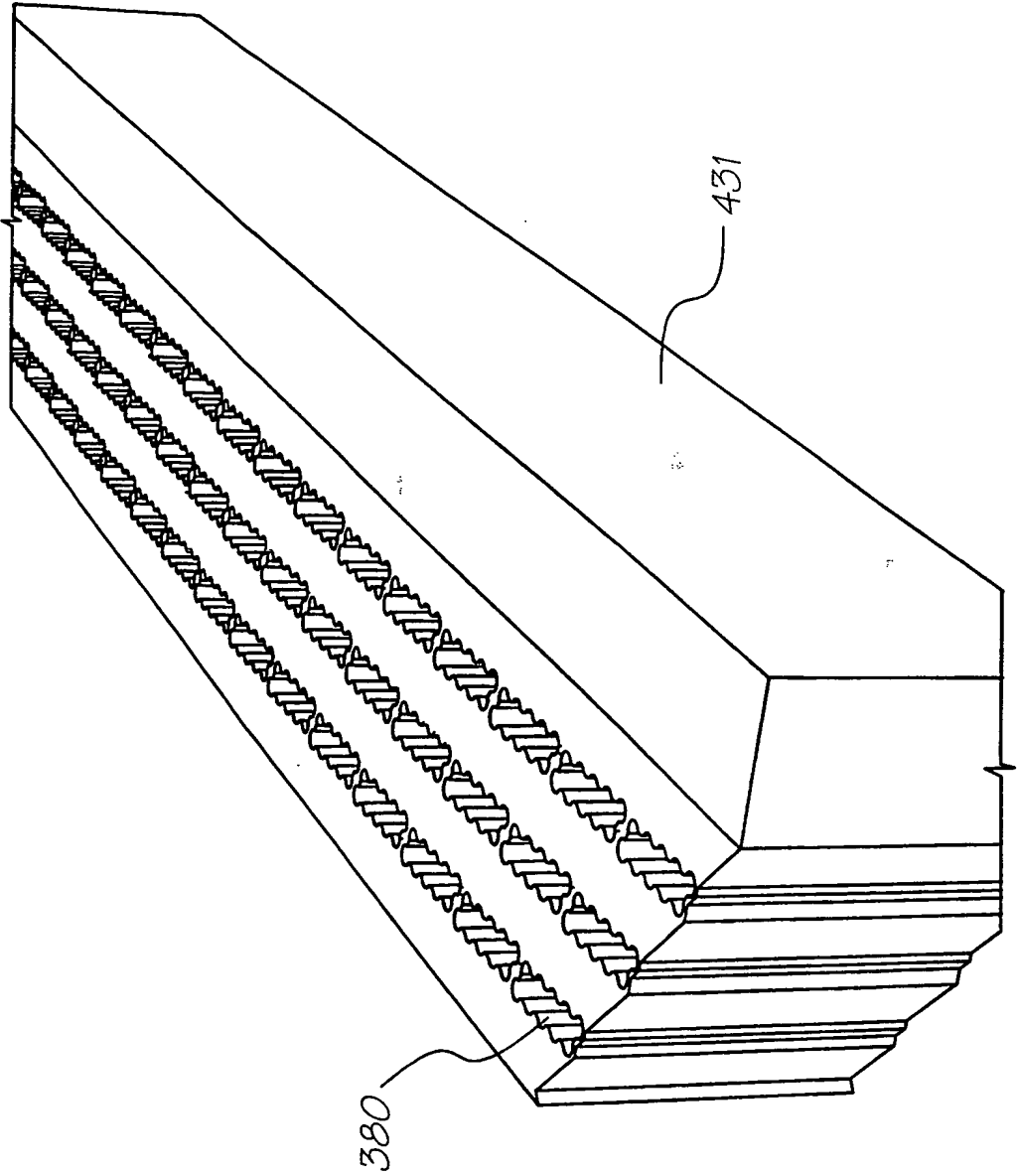


FIG. 88

FIG. 89

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

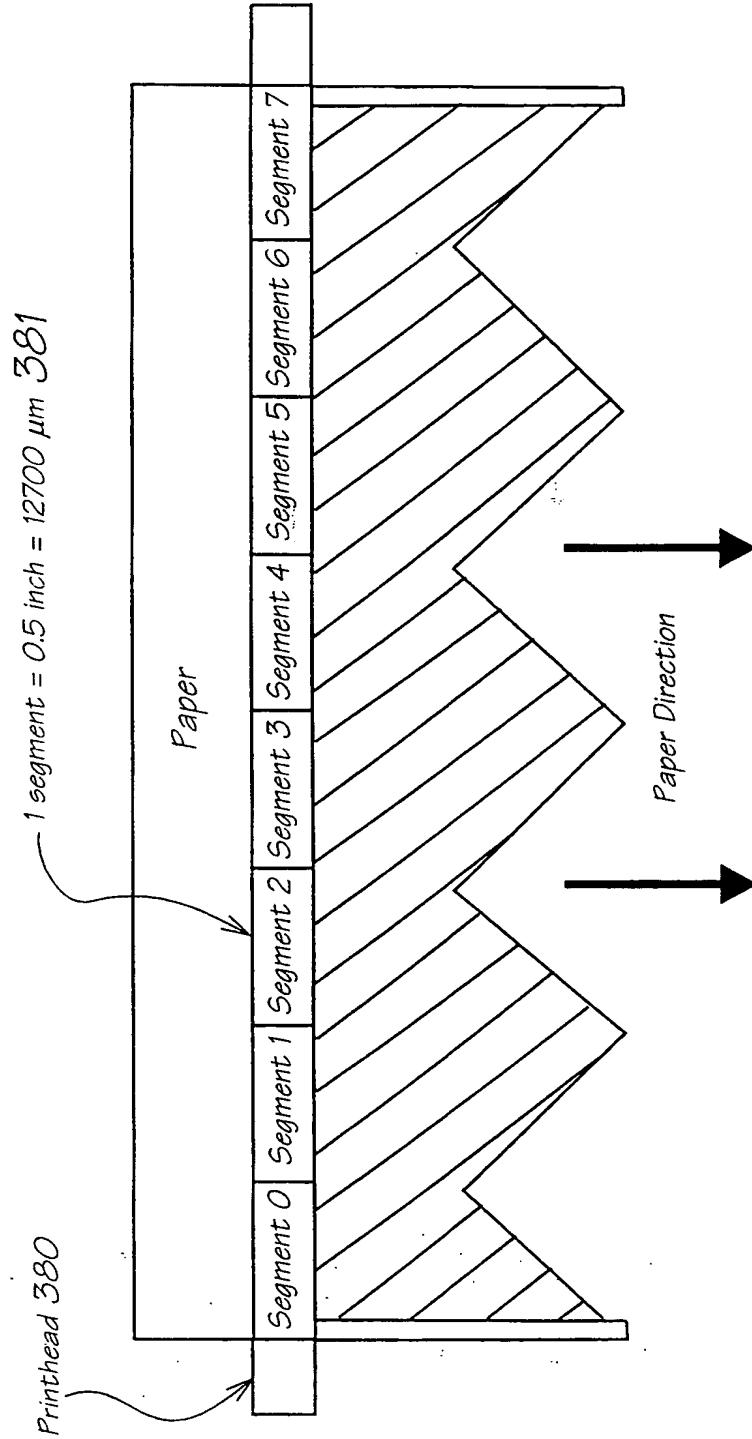
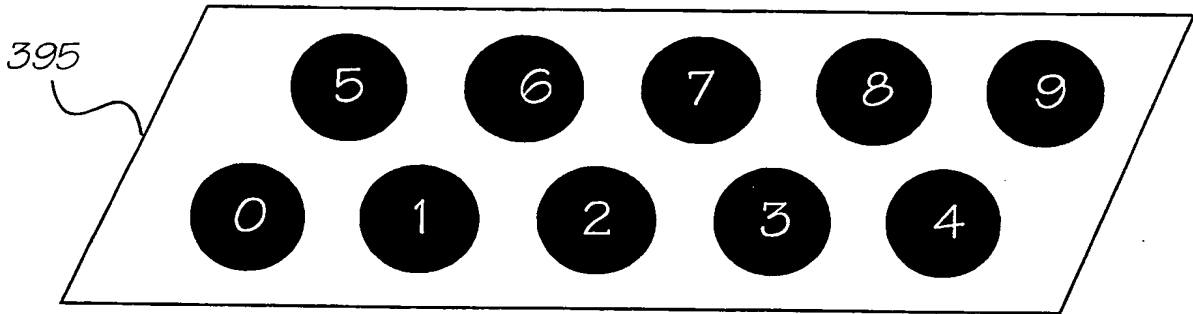


FIG. 89



APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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A single pod, numbered by firing order

Fig. 90

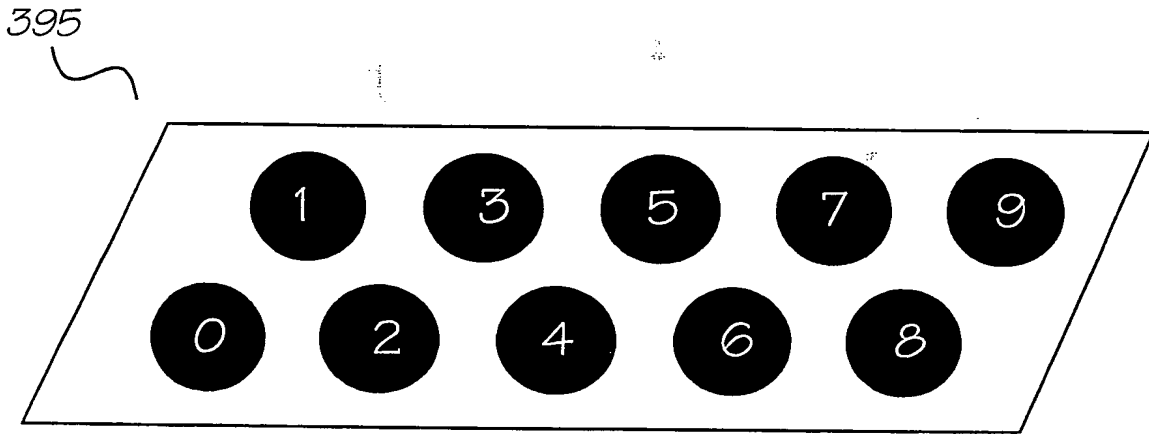


Fig. 91

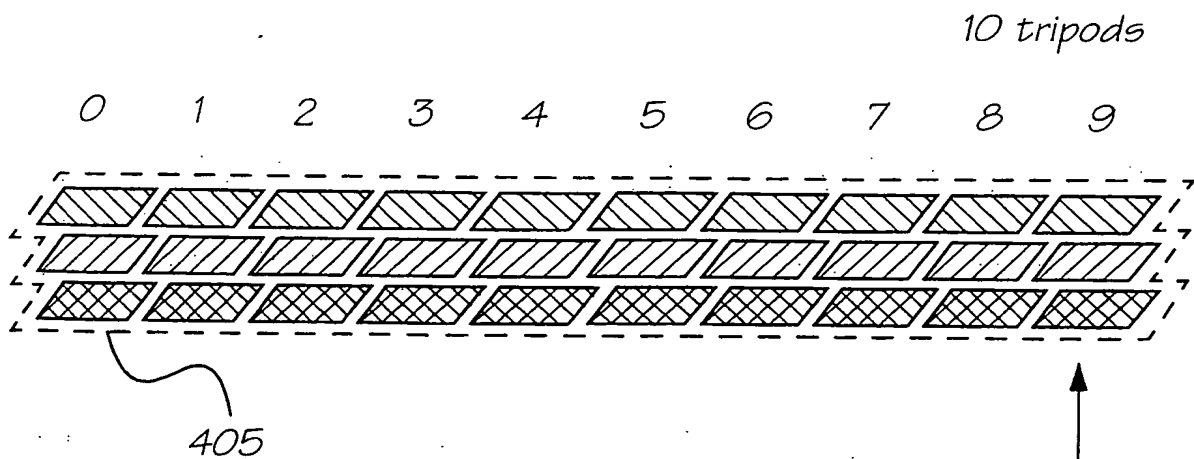


Fig. 93

APPROVED	O.G. FIG.
BY	CLASS. SUBCLASS
DRAFTSMAN	

WO 00/23279

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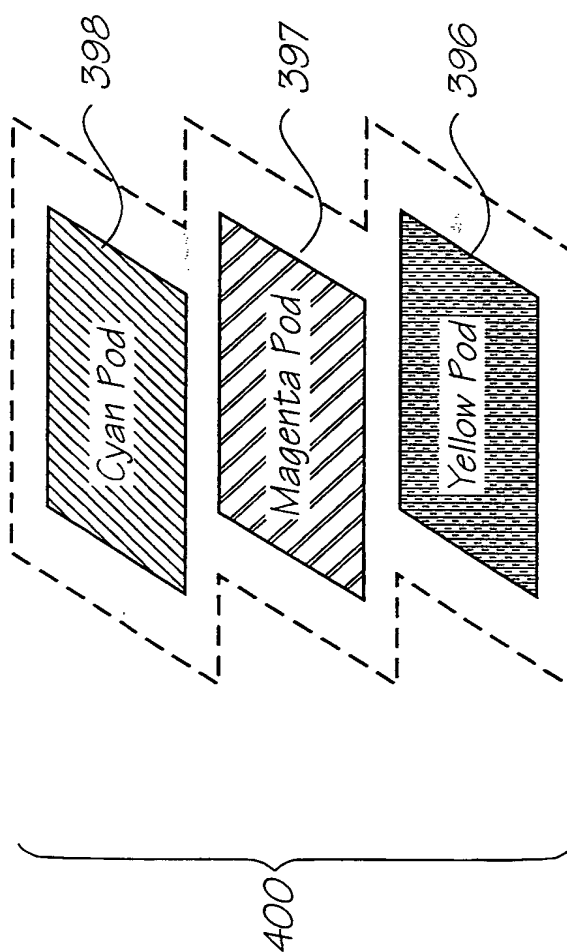


FIG. 92

TOTERO" 26220860

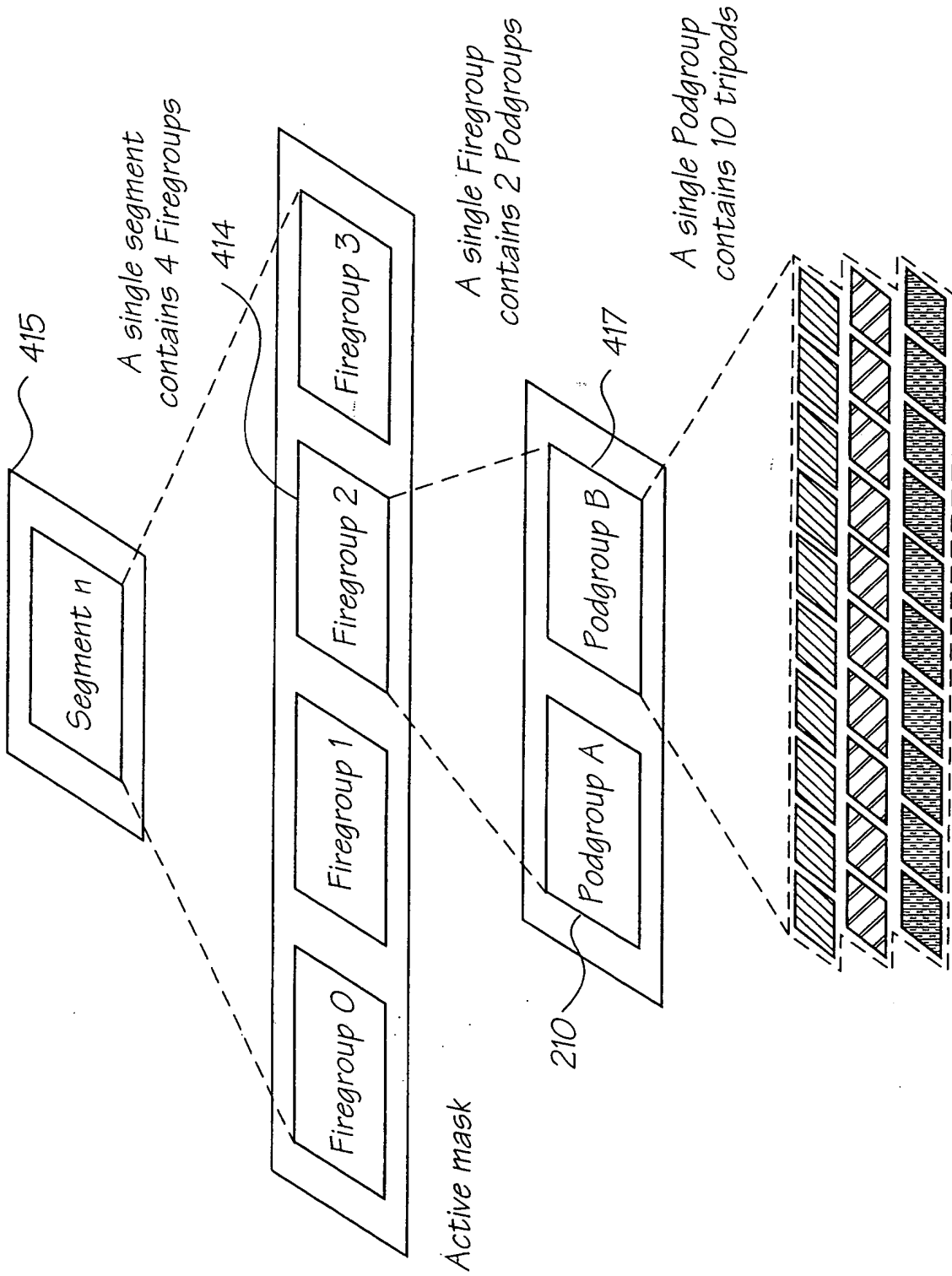


FIG. 94

FIG. 94

T07E80" 46220860

APPROVED	C.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

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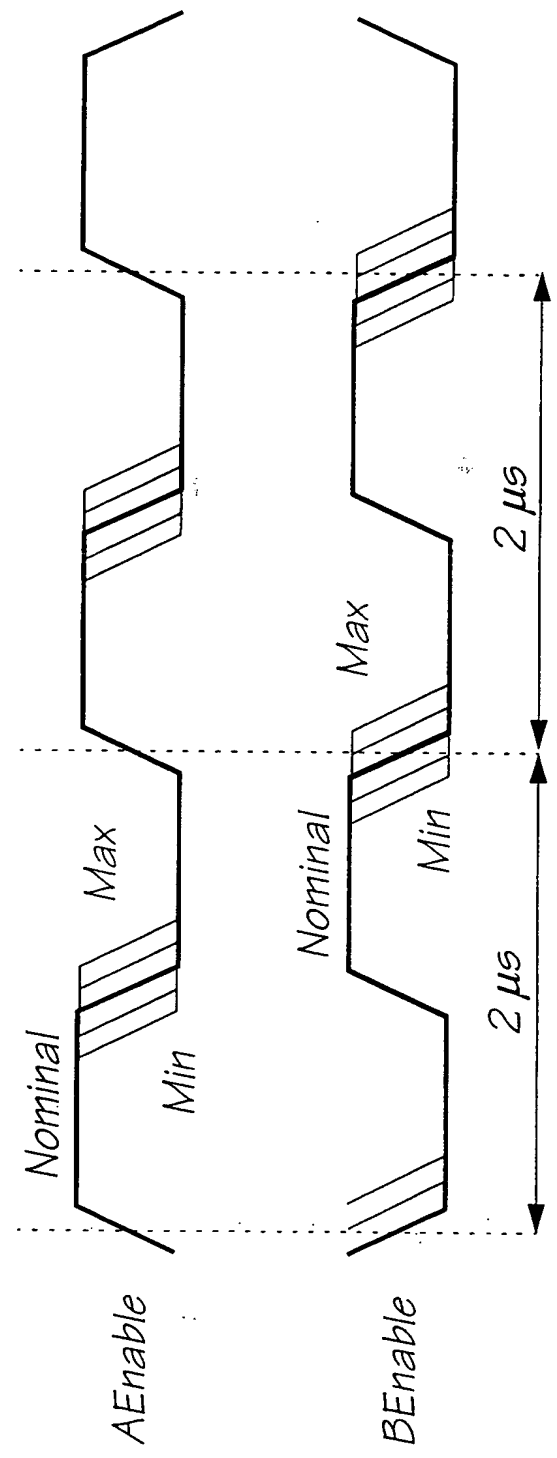
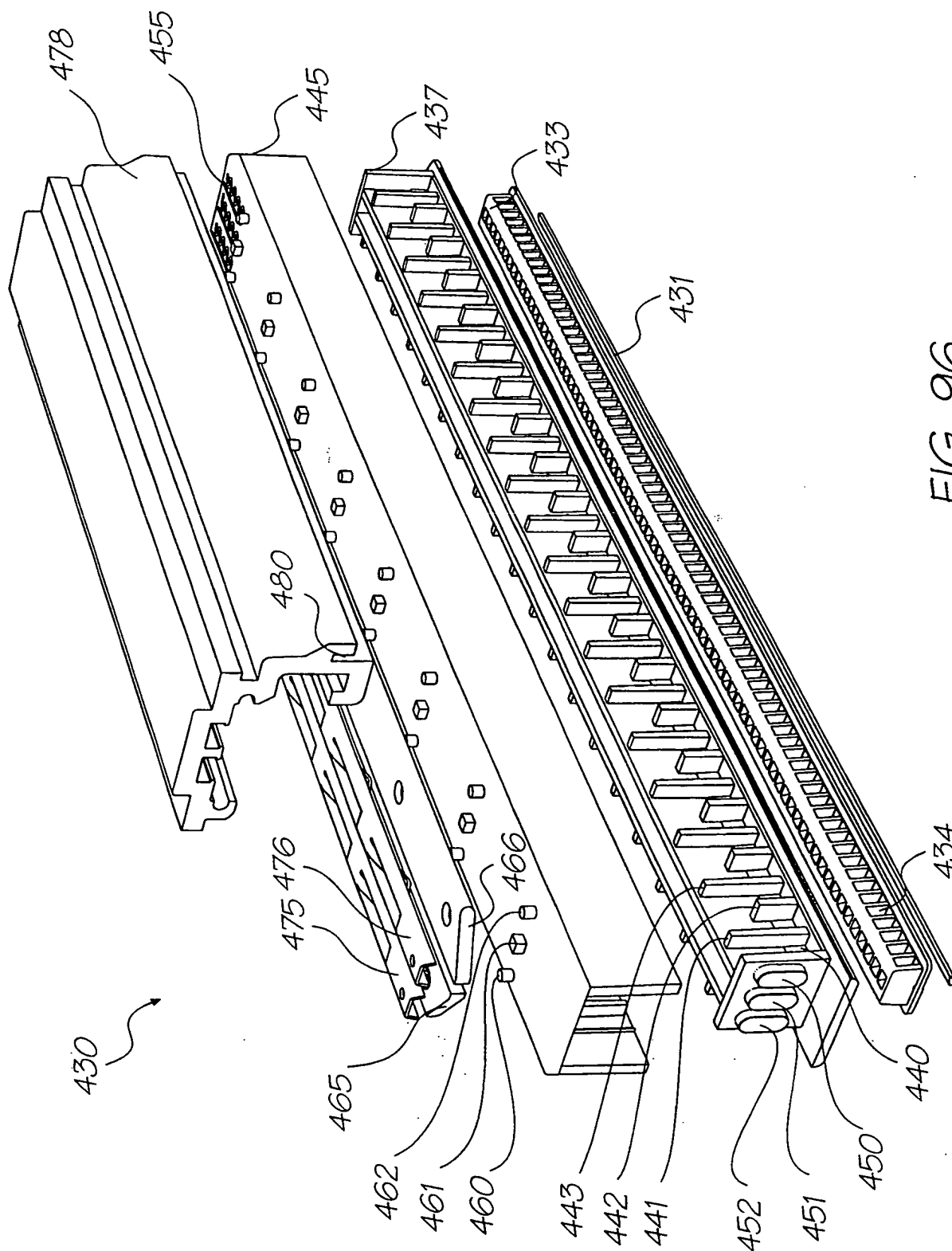


FIG. 95

FIG. 96



TOTAL 46220860

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

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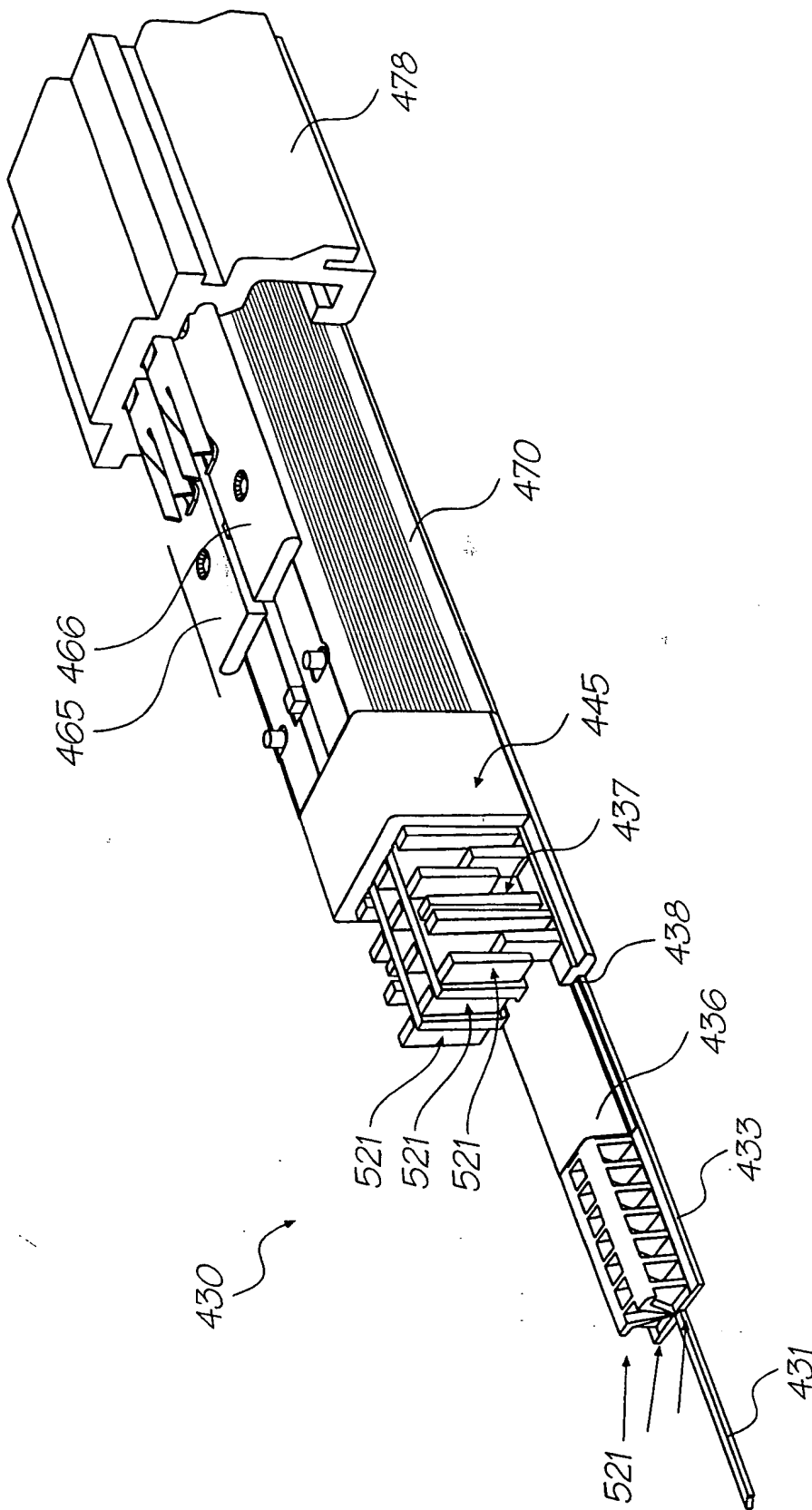


FIG. 97

FIG. 98

APPROVED	O.G. FIG.
BY	CLASS/SUBCLAS.
DRAFTSMAN	

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PCT/AU99/00894

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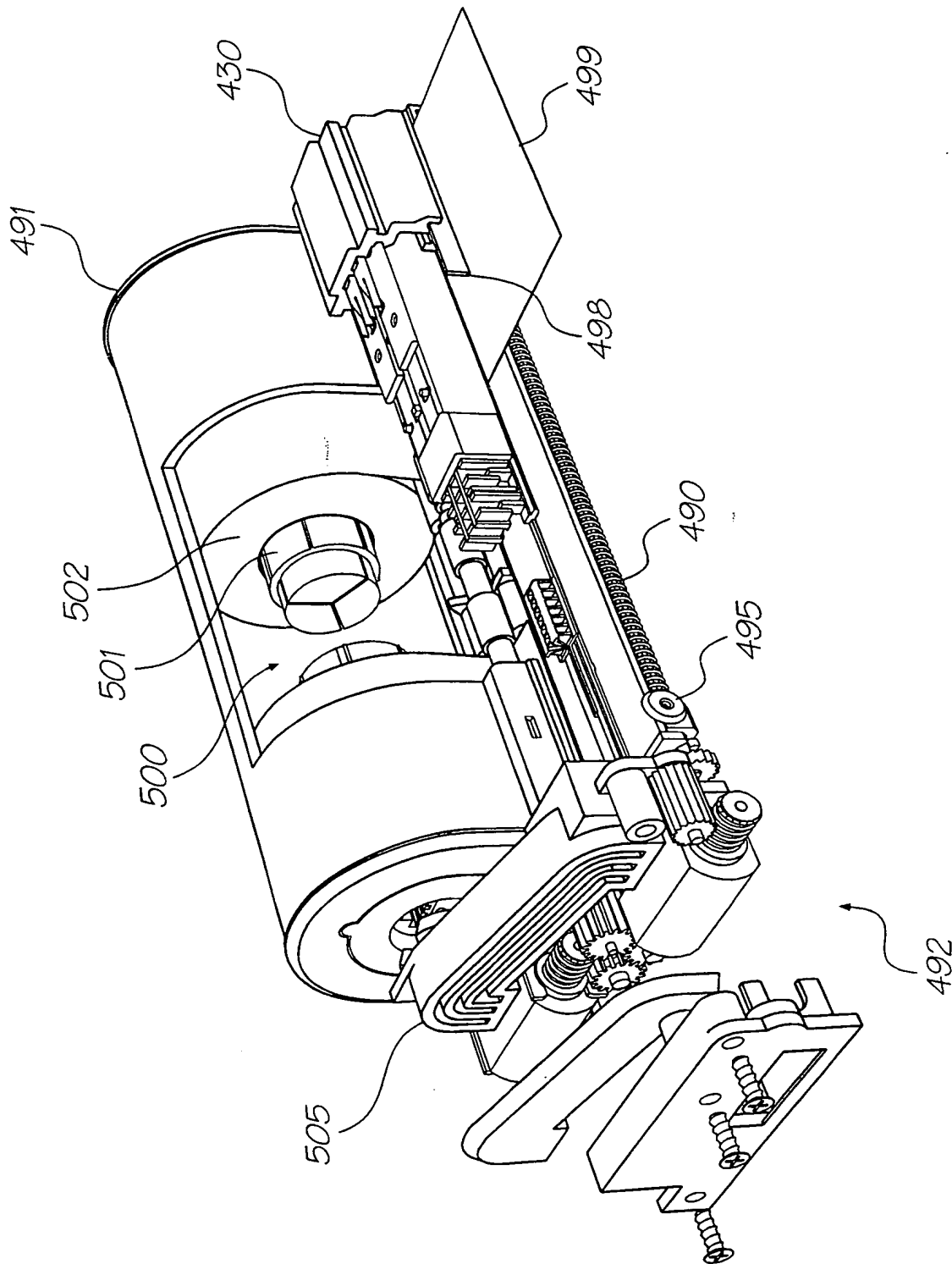


FIG. 98

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

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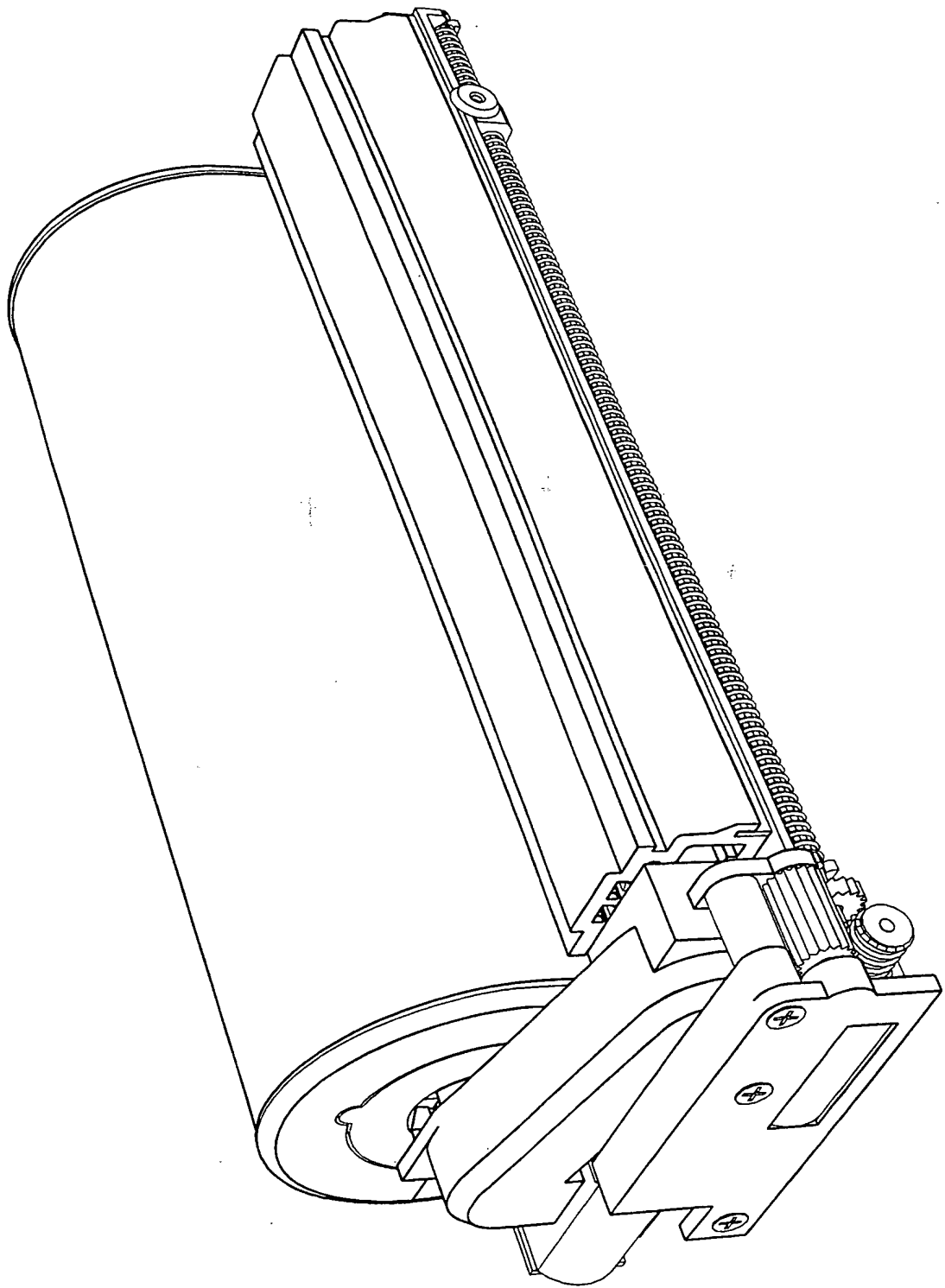


FIG. 99

FIG. 99



APPROVED BY	O.G. FIG.
	CLASS SUBCLAS
DRAFTSMAN	

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PCT/AU99/00894

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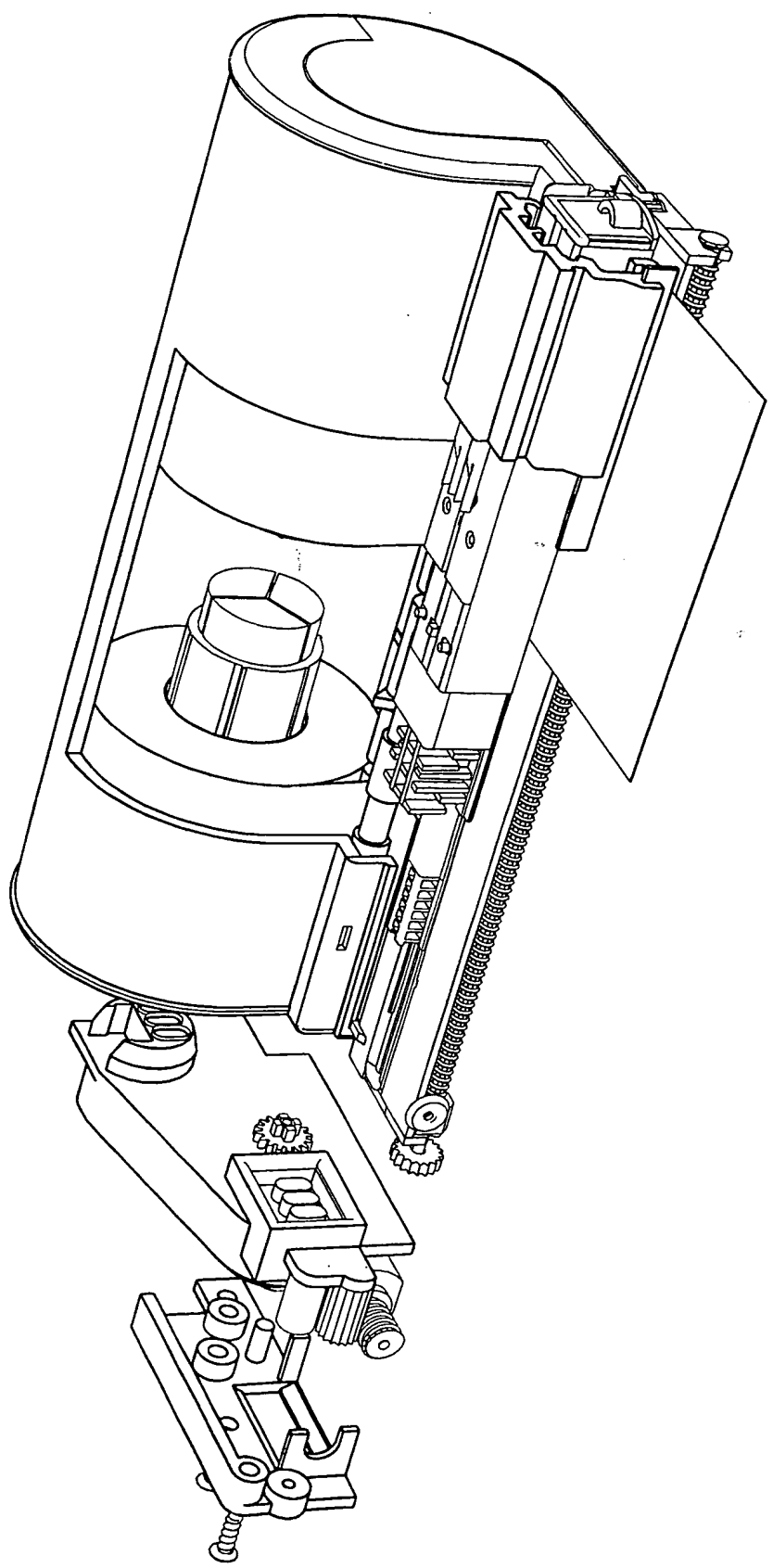


FIG. 100

FIG. 100

APPROVED BY	O.G. FIG.	
	CLASS	SUBCLASS
DRAFTSMAN		

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PCT/AU99/00894

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FIG. 101

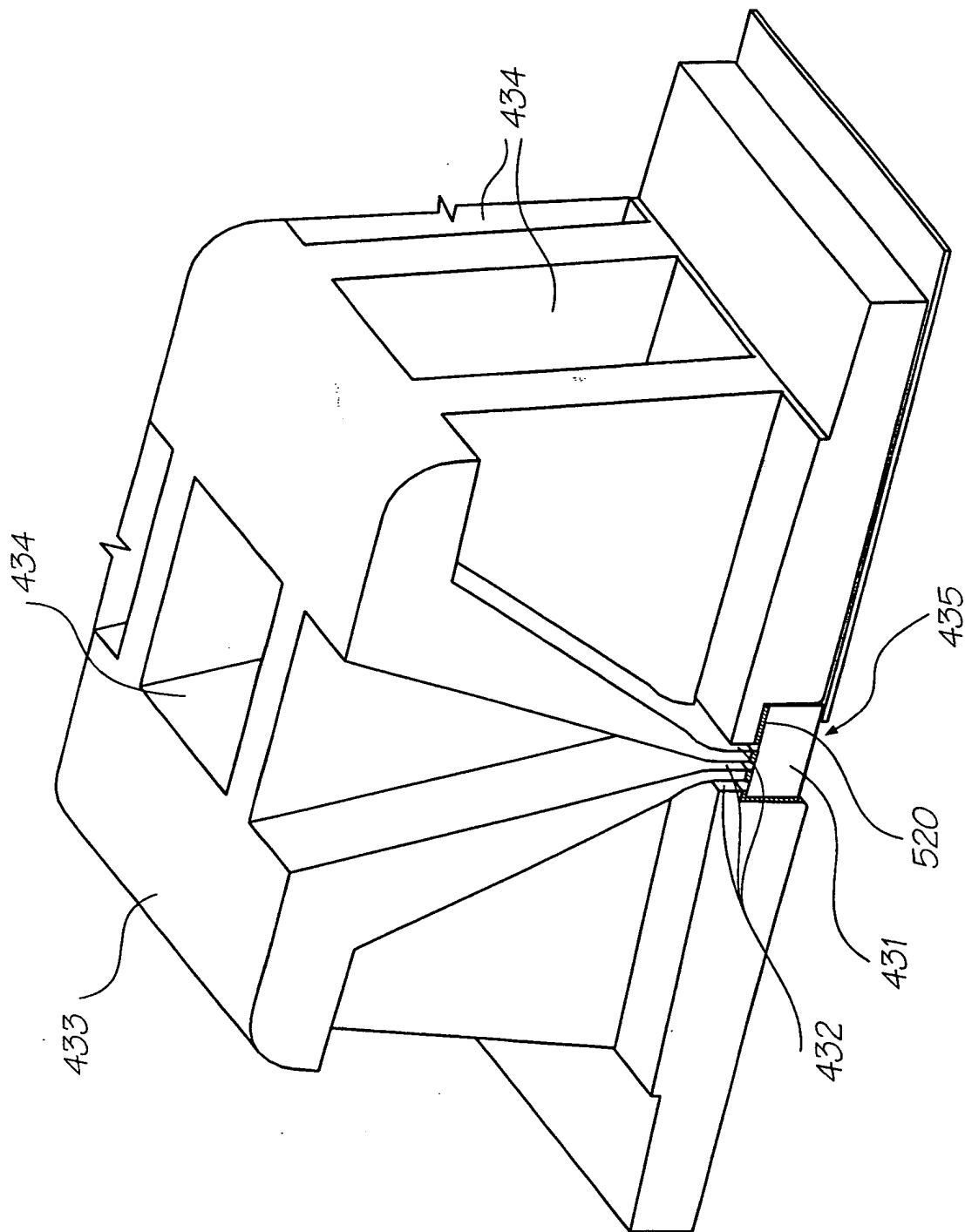


FIG. 101

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

WO 00/23279

PCT/AU99/00894

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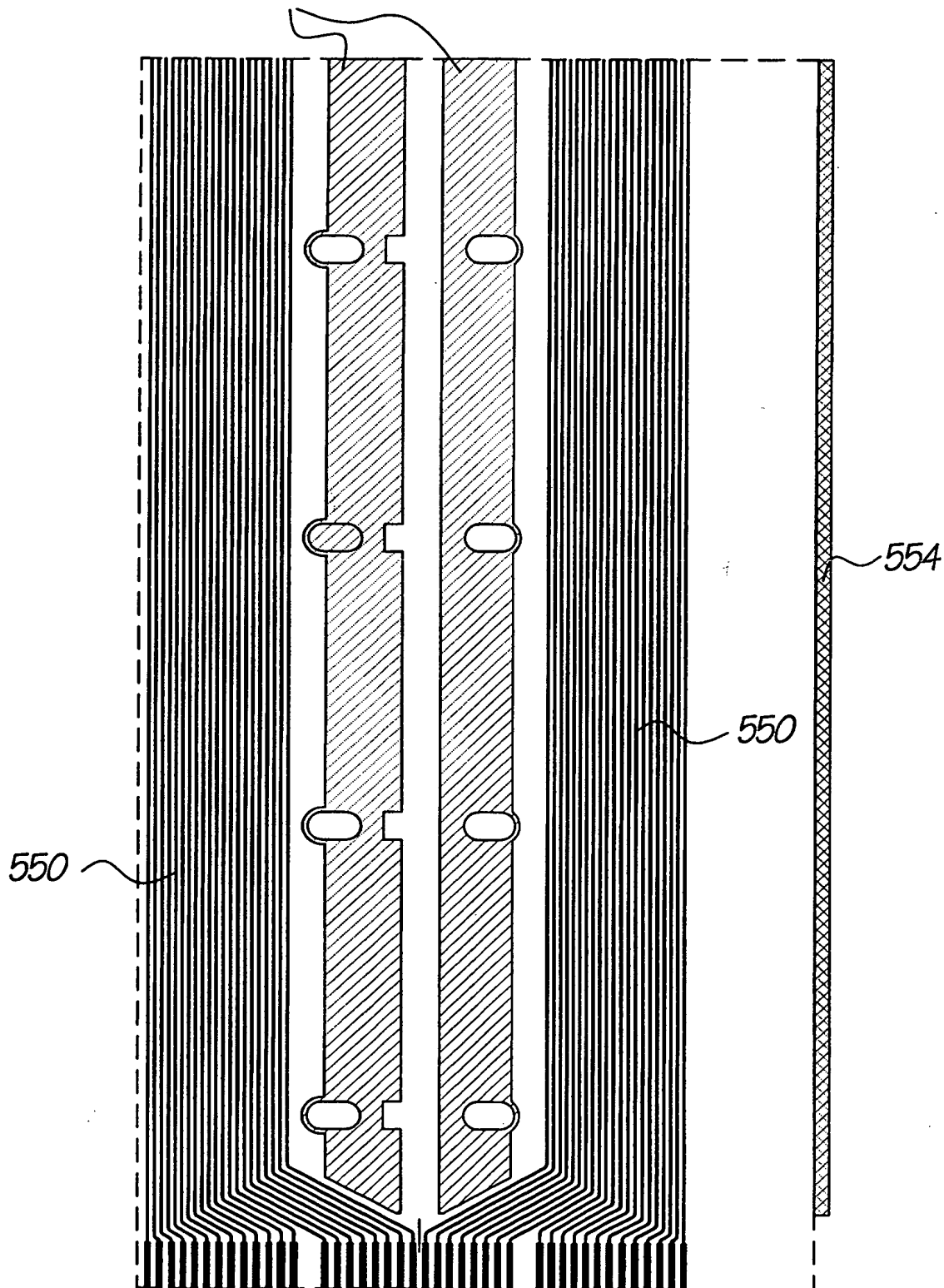


FIG. 102

FIG. 102

APPROVED	C.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

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FIG. 103

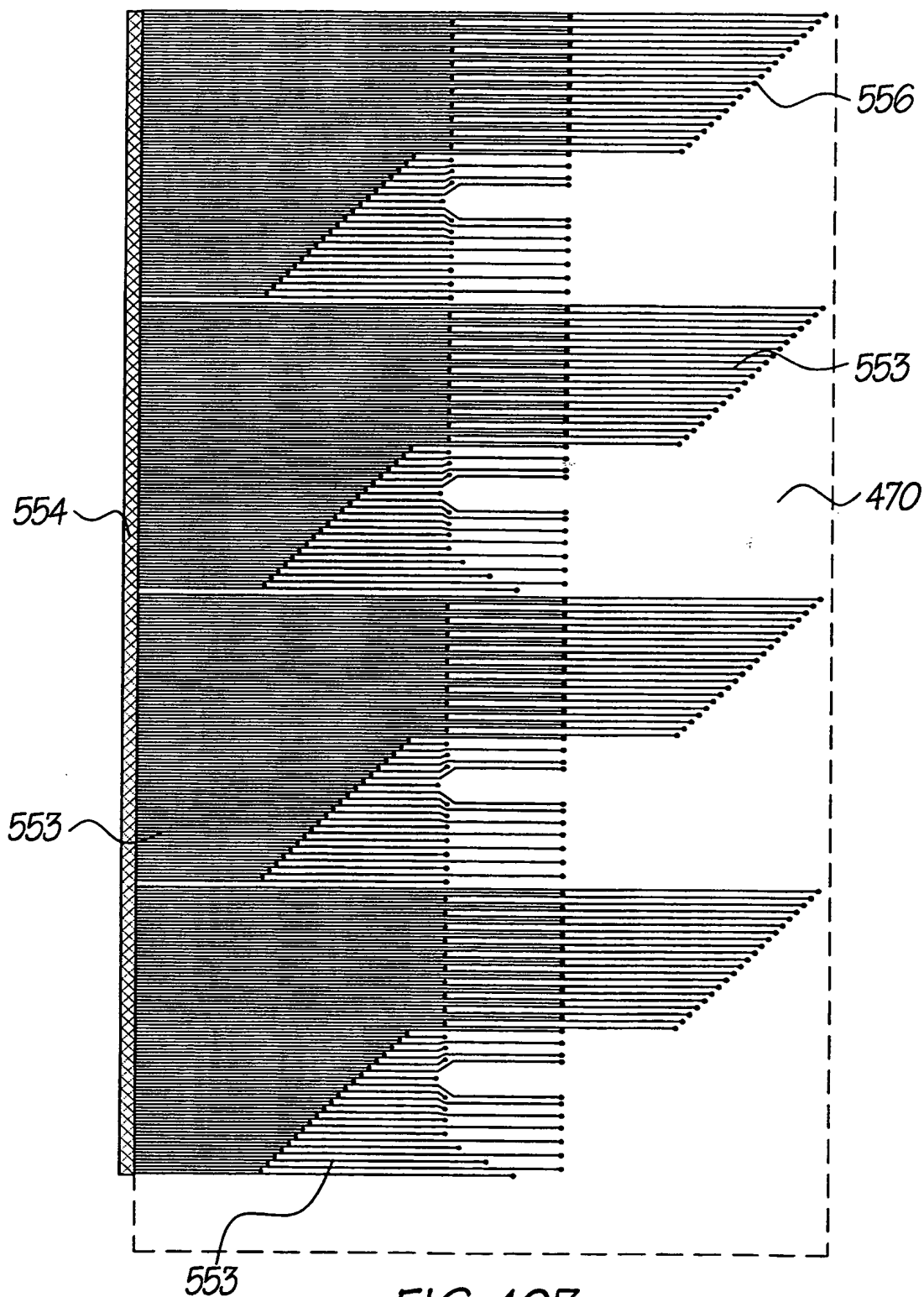
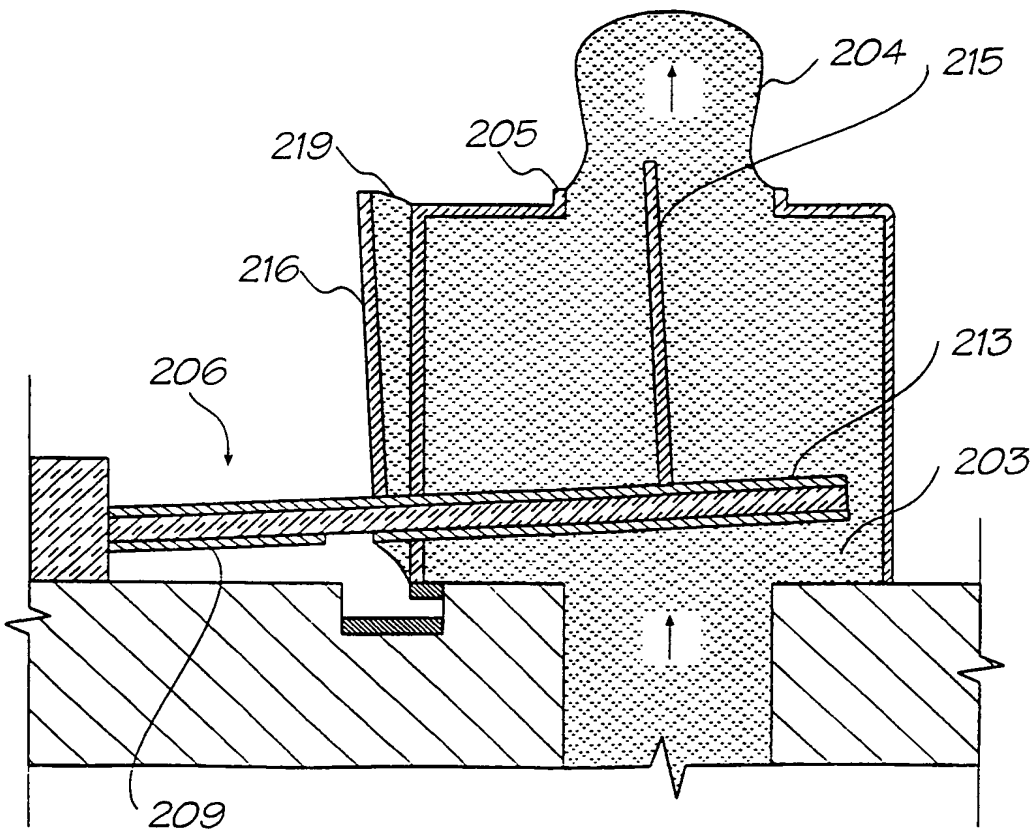
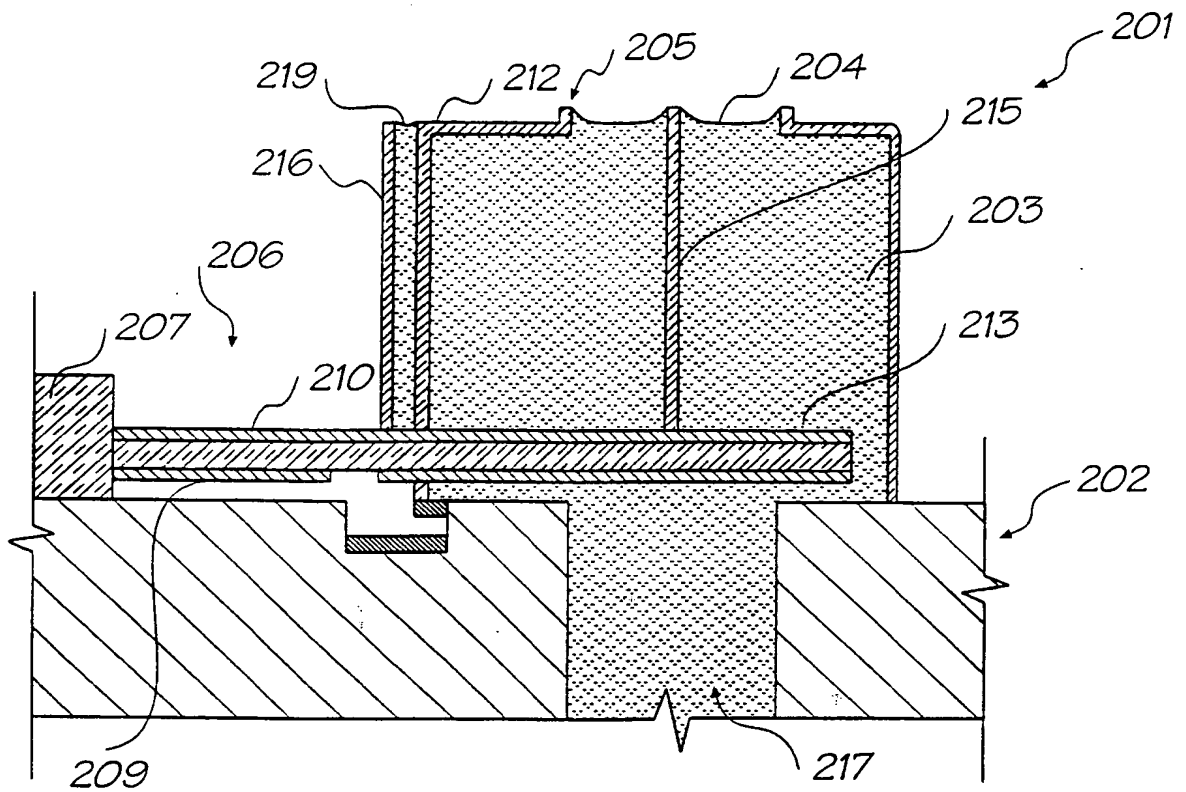


FIG. 103

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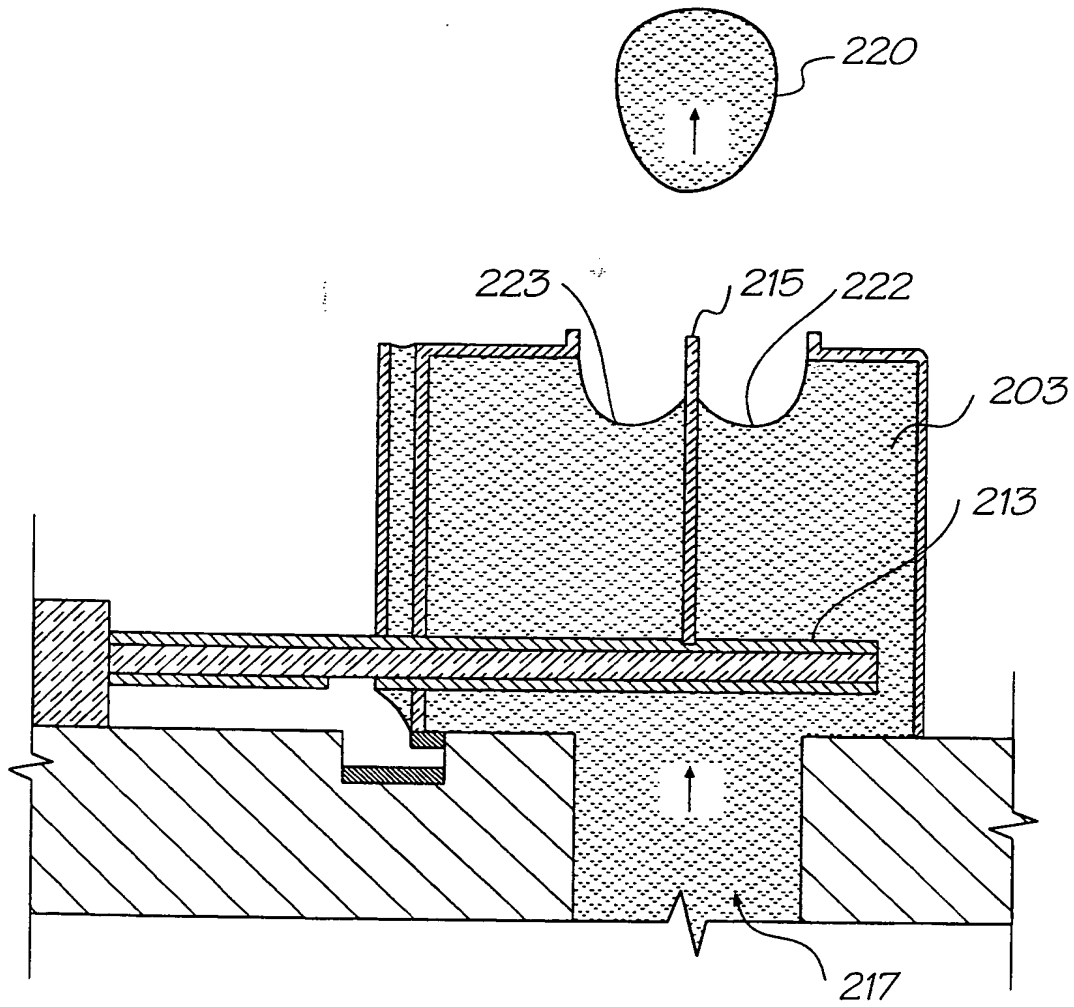


FIG. 106

FIG. 106

APPROVED	C.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

FIG. 107

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

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PCT/AU99/00894

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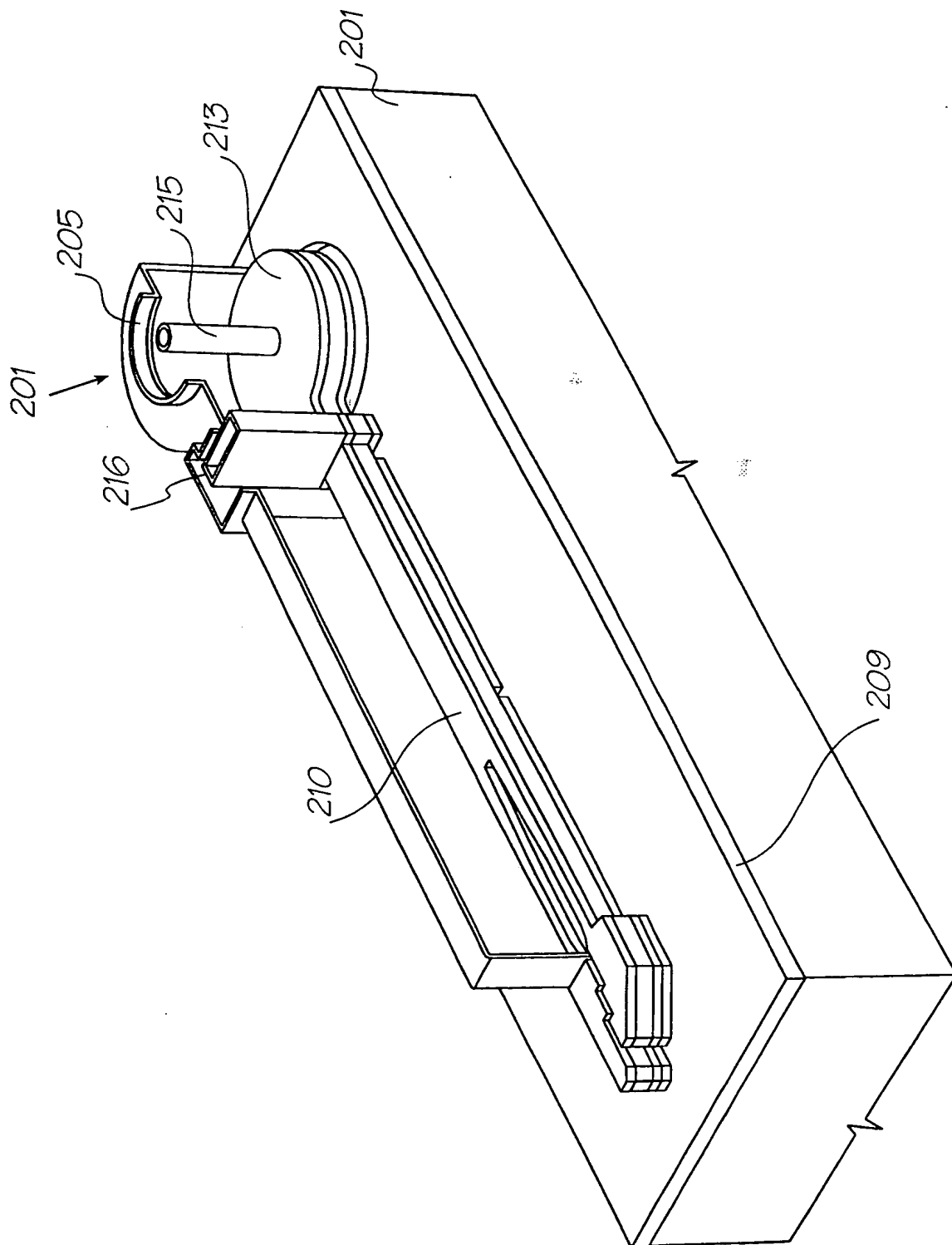


FIG. 107

FIG. 108

APPROVED	O.G. FIG.
BY	CLASS SUBCLASS
CRAFTSMAN	

WO 00/23279

PCT/AU99/00894

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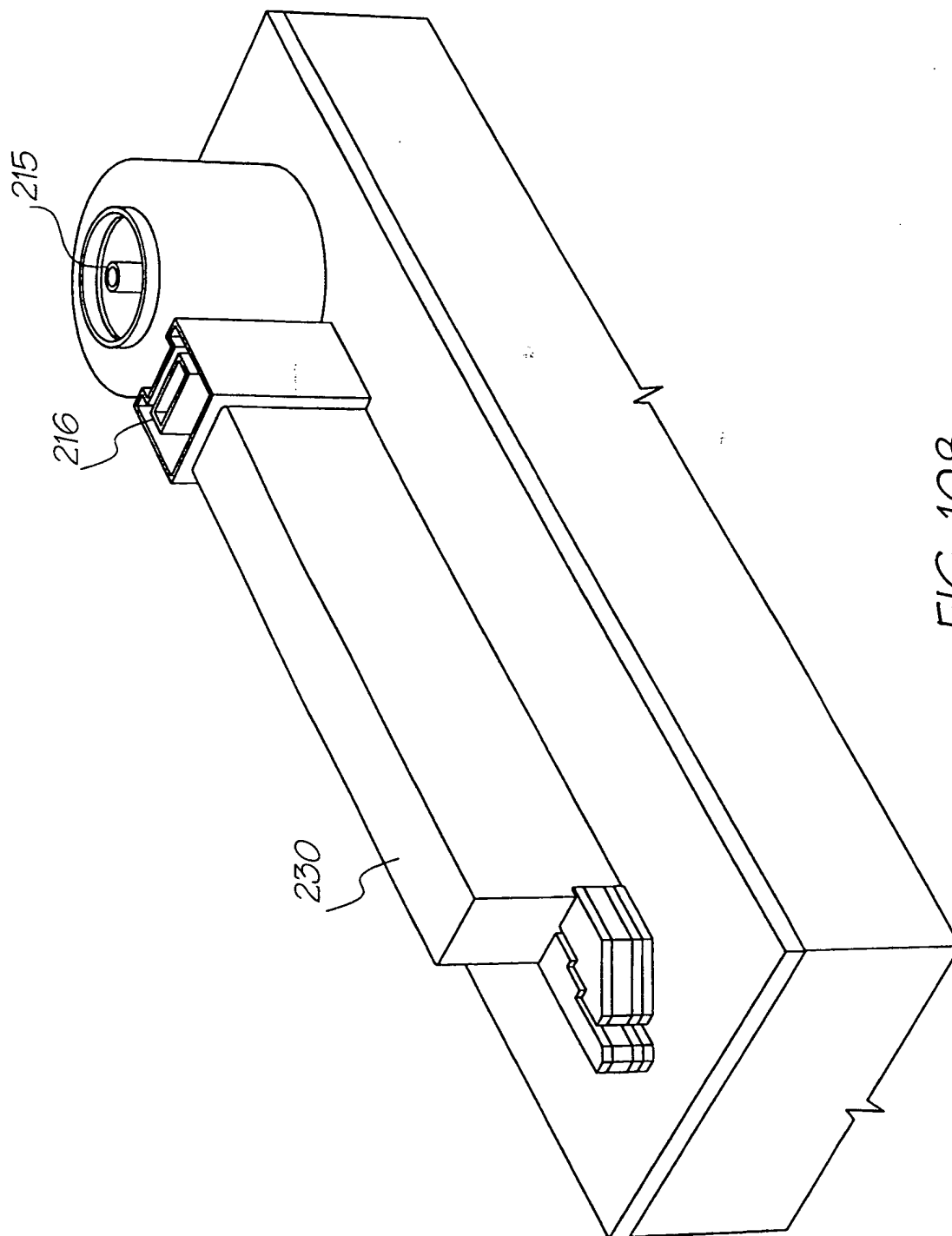


FIG. 108



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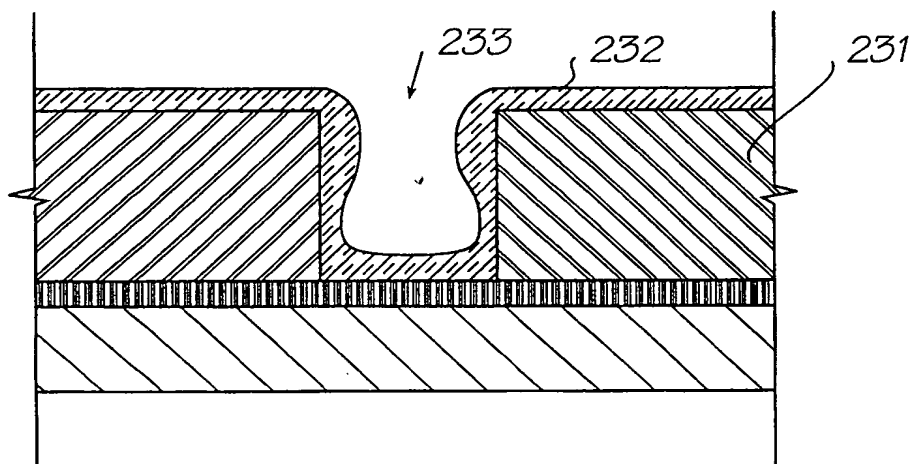


FIG. 109

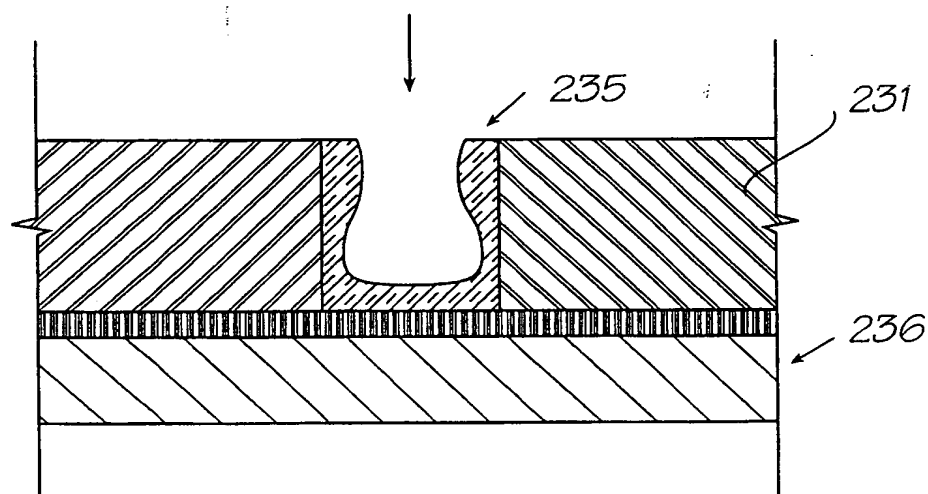


FIG. 110

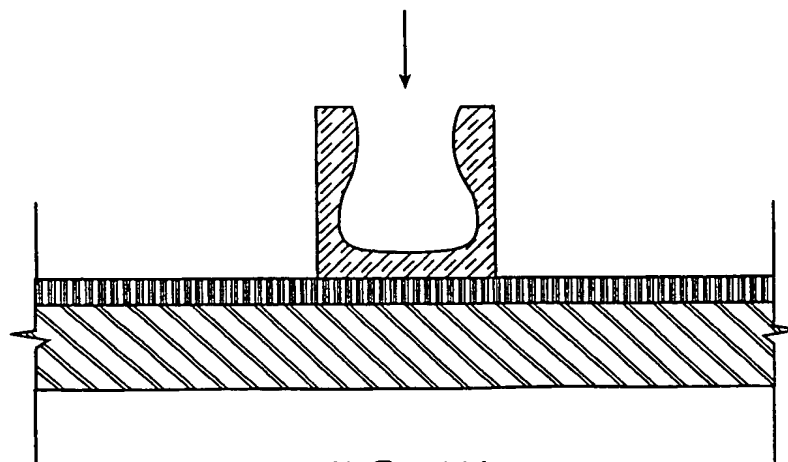


FIG. 111

APPROVED	O.G. FIG.
BY	CLASS/SUBCLASS
DRAFTSMAN	

FIG. 109